LB≡BW

Breaking new ground

Disclosure report 2019

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Key figures for the LBBW Group

EUR million	31/12/2019	31/12/2018
Available capital		
Common equity Tier 1 (CET 1) capital	11,790	12,119
CET1 fully loaded	11,790	12,104
Tier 1 capital (T1)	13,257	13,039
T1 fully loaded	12,534	12,104
Own funds (T1 + T2)	18,492	17,690
Own funds fully loaded	18,431	17,612
Risk weighted assets (amounts)		
Total risk (RWA)	80,484	80,348
Risk-based capital ratios as percentage of RWA		
Common equity Tier 1 capital ratio in %	14.6	15.1
CET1 ratio fully loaded in %	14.6	15.1
T1 capital ratio in %	16.5	16.2
T1 ratio fully loaded in %	15.6	15.1
Total capital ratio in %	23.0	22.0
Total capital ratio fully loaded in %	22.9	21.9
Additional Tier 1 capital buffer requirements as percentage of RWA		
Capital conservation buffer requirement in %	2.5	1.9
Countercyclical capital buffer requirement in %	0.1	0.0
Supplementary requirements for G-SIB and O-SIB in %	1.0	0.7
Total CET1 buffer requirements in %	3.6	2.6
Available CET 1 after meeting minimum capital requirements in %	6.6	8.0
Leverage ratio		
Leverage ratio total exposure measure	270,340	260,121
Leverage ratio in %	4.9	5.0
Leverage ratio fully loaded in %	4.6	4.7
Liquidity coverage ratio		
Total HQLA	61,487	60,295
Total net cash outflows	45,793	44,307
LCR in % [1]	134.3	136.2

1 The LCR is calculated by taking the average liquidity coverage ratios of the last twelve months before the end of each quarter.

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). 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.

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 by the European Banking Authority (EBA).

EBA Guidelines EBA/GL/2017/01 on LCR disclosure are published in the report to complement the disclosure of liquidity risk management under Article 435 CRR, as are the EBA Guidelines EBA/GL/2018/10 on »non-performing loans«.

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 (such as the Annual Report) to the extent that the information which they contain has already been published under other disclosure 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 country-by-country report in accordance with section 26a(1) sentence 2 of the German Banking Act (Kreditwesengesetz – KWG) and 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.

As required by EBA/GL/2016/11, changes to figures are commented on at the time the tables in question are published. There are thus various observation periods for comments.

The figures published in the disclosure report have been rounded to the next million in accordance with commercial principles. Figures under EUR 500,000 are therefore shown as »0«. If there is no amount for the item in question, this is shown with »–«. Accordingly, rounding differences may arise through aggregation.

The figures published in this report are based on the reporting date 31 December 2019 and do not include the impact of the COVID-19 pandemic.

2 Risk management (Article 435 CRR)

2.1 Risk-oriented integrated bank management

Risk is managed as part of LBBW's strategy, LBBW law and its articles of association. Any risks along with related earnings opportunities and growth potential will be entered into in a deliberate and controlled manner, in the context of precisely defined risk tolerance. Particular focus is given to capital and liquidity management.

Internal control processes with clearly defined organizational and operational structures, the risk management and control structures and process-independent internal auditing ensure that business operates are in line with the strategy.

The processes, procedures and methods are regularly reviewed to ensure their adequacy and permanently developed further. These reviews also take account of and implement the findings of the statutory auditor, the Group Auditing division and the European Central Bank (ECB)'s SREP process.

Material types of risk

An annual Group risk inventory is initially used to ensure that all material types of risk at LBBW are identified and thus made available for management and monitoring. The aim of the risk inventory is to determine the »risk universe«, which covers all types of risk that may affect LBBW.

The overall risk profile of the LBBW Group is ascertained on this basis and is presented to the Board of Managing Directors for approval in the form of a risk map. 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 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

Specific risk strategies are created for all types of risk that are material from a Group perspective. In addition, a concentration analysis is conducted for these risks to identify key vulnerabilities. As well as concentration effects within the respective type of risk (»intra-risk concentration«), this also takes into account effects between different types of risk (»inter-risk concentration«).

Risk strategy and risk tolerance

The Board of Managing Directors and the Risk Committee risk stipulate the principles of the risk management system for all types of risk identified as material 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) and relevant European requirements (including the European Banking Authority Guidelines). 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.

In terms of capital, the quantitative part of risk appetite sets out concrete specifications in the form of thresholds for LBBW's material economic and regulatory steering parameters – specifications are set out for times of normal business operations and well as under stress conditions. Compliance with the specifications is ensured in part by escalation processes based on a traffic light systems and regular stress tests. 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 included in the risk inventory.

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 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 to all employees throughout the entire Group.

The sustainability policy in place at the LBBW Group must be observed. The LBBW Group seeks to act in the best long-term interests of its customers and stakeholders. To implement the sustainability policy, the organizational unit sets out sustainability and environmental social governance standards for all divisions.

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 thus establish regulations for managing the risks identified deliberately and in a controlled manner in order to leverage the opportunities these create, taking into account risk-return considerations. Additional information on the specific risk strategies is provided in the chapters on the respective risk type in LBBW's 2019 annual report.

Risk capital and liquidity management

The aim of this process is to secure adequate capital and liquidity, both in times of normal business operations and under stress conditions, and thus to safeguard the permanent viability of the LBBW Group. For normal business operations, the focus is on achieving the corporate objectives, while provisions for adequate stress resistance are made under stress conditions.

Medium-term planning

Medium-term planning, which is performed once per year, comprises economic and regulatory perspectives. The planning connects these two perspectives and acts as a link between the strategic framework and integrated bank management throughout the year. The planning period covers five years.

Planning thus lays the foundations for monitoring targets set at all management levels. Within the management areas and dimensions, deviations from targets are analyzed, reported and – where necessary – measures to achieve these targets are agreed on, implemented and observed. This is performed by the established responsible persons/committees within the management processes.

In addition, compliance with the internal targets is ensured over the same period of time, including for various adverse developments.

Economic perspective

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).

The internal monitoring of risk-bearing capacity (RBC) 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. Risks within the framework of the LBBW Group's risk-bearing capacity are described before possible measures to limit risks (so-called gross presentation).

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), the realized income statement result in accordance with IFRS is considered a component of aggregate risk cover. Conservative deductions are also taken into consideration on account of regulatory requirements. In particular, subordinated capital has not been included since 31 March 2019 in accordance with the provisions of the ECB's ICAAP guidelines.

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 99.9% (99.93% until 31 March 2019) and a one-year holding period for counterparty, market price, real estate, development, investment and operational risks; other risks (reputation, business, pensions and model risks) are quantified either as value-at-risk or using simplified procedures.

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. 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.

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. Further information can be found in chapter 15 »Liquidity coverage ratio«. The model risks are managed entirely via the model risk management process and the tools described in the corresponding chapter of LBBW's 2019 annual report.

Regulatory perspective

Apart from the economic perspective, LBBW's risk appetite and management concept also includes the regulatory steering group. The purpose of this steering group is to ensure that internal thresholds for regulatory capital and liquidity ratios are observed at all times. The ongoing monitoring process encompasses regular target/actual comparisons and a forecast process and ensures that corporate

objectives (and thus also regulatory minimum requirements) are achieved or met in the long term. The process is currently being further developed as part of the requirements under the ECB's ICAAP guidelines.

The LBBW Group bases the coordination and definition of its internal targets particularly 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, various 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.

These scenarios are designed using various criteria: LBBW scenarios comprise adverse developments with moderate deviations (from planning), stress scenarios with exceptional but plausible events of different degrees of severity and scenarios that threaten the existence of the bank within the context of reorganization planning. Adverse scenarios span a period of several years, with serious stress scenarios defined either for several years or one year.

The scenarios are arranged in such a way that they take into consideration the impact on 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, with a particular focus on LBBW's risk concentrations.

Medium term planning takes into account adverse scenarios both in top-down and in bottom-up planning. The scenarios are based on macroeconomic issues and designed over a five-year period. They also take into account the interdependency of the real economy and the financial economy, with both the effects of a bank-specific stress case and a market-wide crisis being modeled. The idiosyncratic scenarios specific to LBBW simulate a stress situation that results from a rating downgrade. The aim is to assess the feasibility of implementing medium-term planning under unfavorable market conditions and to demonstrate a clear link between risk tolerance, business strategy and the capital and liquidity plan.

Stress scenarios are defined for a one year period in order to ensure risk-bearing capacity and compliance with regulatory capital ratios even the event of sudden and exceptional but plausible developments. These stress scenarios are economically geared to different types of risk. 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 and using simulations of potential countermeasures. These also form the basis of the recovery plan pursuant to the German Recovery and Resolution Act (SAG).

Monitoring and escalation using tolerance and recovery thresholds

Effective monitoring of LBBW's capital and liquidity situation using established parameters and timely escalation in the event of potential bottlenecks is based on corresponding thresholds, escalation procedures and escalation methods for all material economic and regulatory steering parameters.

LBBW uses a multi-stage procedure that differentiates between purely internal thresholds and recovery thresholds. The limits and thresholds apply to the current value of the respective steering parameters and to the value under simulated stress conditions and are well above the minimum regulatory requirements. Monitoring is carried out at Group level and at various lower management levels.

2.2 Risk management processes, organization 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 in the first line of defense and monitored by central Group Risk Control, maintaining the separation of functions. 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.

An overview of the structure and individual elements of the risk management system of LBBW is given in the following chart. Additional information on this is provided in the chapters on the respective risk type.

Risk management structure

Figure 2: 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.

The »Executive Risk Committee«, a monitoring body, comprises the board members with responsibility for real estate and project financing, capital markets business and asset management/international business, risk management, compliance and auditing, the department head of Finance/Strategy and divisional managers from Group Risk Control, Compliance, Financial Controlling and front 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 control committee »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 Committee comprises the divisional managers with responsibility for capital markets business and Asset Management/International Business, risk management, compliance and auditing, the divisional director of Finance/Strategy and divisional managers from Financial Controlling and Treasury. Group Risk Control and Finance also participate in the meetings.

The 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 includes the divisional managers with responsibility for capital markets business and Asset Management/International Business, risk management, compliance and auditing, the divisional directors from Information Technology, Finance/Strategy and divisional managers from Legal, Group Risk Control, Compliance, Finance, Financial Controlling, Group Auditing, Treasury and front office.

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 products from the Capital Market Business division. 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, which operates as the third line of defense, 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.

Statement by the Board of Managing Directors

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). Key figures and an overview

of the bank's risk profile are described briefly in the chapter below. The risk declaration was approved by the Group's Board of Managing Directors.

2.3 LBBW Group – risk situation

LBBW Group – risk-bearing capacity

	31/12/2019		31/12/2018	
EUR million	**Absolute[1]**	**Utilization in %**	**Absolute[1]**	**Utilization in %**
Aggregate risk cover	12,116	59	16,838	42
Economic capital limit[2]	10,000	71	12,800	56
Correlated total economic capital	7,126		7,146	
of which:				
diversification effects	-483		-481	
counterparty risk	3,692		4,086	
market price risk	2,341		1,885	
investment risk	43		40	
operational risk	655		790	
development risk	153		146	
real estate risk	121		123	
Other risks[3]	604		558	

1 Confidence level 31 Dec. 2019: 99.9%/1 year holding period and 31 Dec. 2018: 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)

Figure 3: LBBW Group – risk-bearing capacity

At EUR 7.2bn, the economic capital is almost unchanged since year-end 2018. As part of implementing the ICAAP guidelines, the confidence level was revised from 99.93% to the regulatory standard of 99.9%. The reduction in counterparty risks and operational risks is due chiefly to this change in methodology. For market price risks, this effect is more than offset by portfolio changes and adjustments to methodology. The developments in methodology aim to increase the stability of market price risks in stress phases.

Aggregate risk cover (ARC) saw a significant decline from the end of 2018 to the end of 2019, falling by EUR 4.7bn to EUR 12.1bn as a result of implementing the requirements set out by the ECB guidelines for the internal bank processes to ensure adequate capital. This decrease is due to the fact that subordinated capital is no longer recognized by regulatory authorities in the ARC in accordance with the ECB's ICAAP guidelines. By contrast, subordinated liabilities, together with the newly issued AT1 capital for the normative (regulatory) perspective, continue to be recognized as regulatory own funds without restriction.

To sum up, it can be stated that the risk-bearing capacity of the LBBW Group was maintained during the entire 2019 financial year, even under the new methodology. The stress resistance required in terms of permanent viability was also maintained at all times, taking into account short-term effective policies.

The economic capital limit at Group level was observed at all times. As at 31 December 2019, the utilization of the aggregate risk cover was 59%.

The presentation of the LBBW Group's risk situation is based on the reporting date 31 December 2019 and does not include the impact of the COVID-19 pandemic.

Based on the latest developments, LBBW assumes that the German and the global economy will be negatively affected by the spread of the virus, at least in the first half of 2020. The rapid development

of the pandemic means that precisely forecasting further effects on risk-bearing capacity is very limited. The negative impact on the global economy and current market uncertainty are likely to have a particular effect on counterparty and market price risks. In addition, further repercussions for other material types of risk cannot be ruled out.

An assessment of the issue for LBBW's liquidity situation can be found in chapter 15 »Liquidity coverage ratio«.

Details on regulatory key figures are provided in LBBW's 2019 annual report in the sections on financial position and performance, the notes and in the chapter on liquidity risks.

2.4 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, mixed financial holding group or mixed 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, with one member of the Board of Managing Directors being granted an additional directorship by the ECB. 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 directorships held in management and/or supervisory bodies 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	3	2
Uta-Micaela Dürig	3	3
Wolfgang Dietz	2	9
Wolfgang Fröschle	1	0
Helmut Himmelsbach	1	1
Christian Hirsch	1	0
Marc Oliver Kiefer	1	0
Bettina Kies-Hartmann	2	1
Sabine Lehmann	1	0
Fritz Kuhn	0	8
Dr. Fritz Oesterle	2	2
Martin Peters	2	62
Prof. Wolfgang Reinhart	4	4
Christian Rogg	1	0
Claus Schmiedel	3	3
B. Jutta Schneider	2	1
Peter Schneider	4	9
Edith Sitzmann	0	4
Dr. Jutta Stuible-Treder	2	1
Burkhard Wittmacher	3	3
Norbert Zipf	1	0

Figure 4: Number of directorships held by members of the Supervisory Board in management and/or supervisory bodies as per 31 Dec. 2019 (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)	4
Karl Manfred Lochner	2	5
Dr. Christian Ricken	3	5
Thorsten Schönenberger	2	2
Volker Wirth	3	7

Figure 5: Number of directorships held by members of the Board of Managing Directors in management and/or supervisory bodies as per 31 Dec. 2019 (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. 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.

LBBW’s Supervisory Board takes into account the following aspects of diversity when selecting suitable candidates for the Board of Managing Directors and the Supervisory Board:

- Educational and professional background
- Gender
- Age

On account of the national focus of its customer and market structure, there is no need for the Board of Managing Directors or the Supervisory Board at LBBW to have an international nature. The various diversity aspects and their relevance to LBBW are reassessed regularly, at least once a year, to ensure they remain up to date.

When appointing members, LBBW takes into account the widest possible spectrum of educational and professional backgrounds and experience in relation to bodies’ key activities. The aim of this is to bring together people with diverse occupational and educational backgrounds in the Board of Managing Directors and the Supervisory Board. Using this concept for a balanced and diverse composition, the Supervisory Board aims to ensure members are highly suitable at an individual level and that LBBW’s management and supervision incorporates as many diverse perspectives and experience as possible.

On account of its legal form, LBBW is not subject to national requirements that require targets to be set regarding the share of women in the Board of Managing Directors and Supervisory Board as set out in the German act on equal participation of men and women in leadership positions in the private sector and in public service (*Gesetz für die gleichberechtigte Teilhabe von Frauen und Männern an Führungspositionen in der Privatwirtschaft und im öffentlichen Dienst*). The Executive Committee has set the Supervisory Board the target of encouraging a greater proportion of women, as well as a strategy for reaching this target. The target for a minimum percentage of women on the Supervisory Board and Board of Managing Directors at LBBW is to be maintained at the current level for the time being. In order to boost the proportion of women in upper management, including the Board of Managing Directors, LBBW has introduced measures to promote women in management positions.

LBBW aims for a balanced range of ages within the Board as a whole (Board of Managing Directors and Supervisory Board), so as to ensure continuity in the committee’s work and smooth successor planning. The articles of association set an age limit for the Board of Managing Directors. No individual should be over 65 years of age when appointed, although an exemption to this may be granted in justified cases.

Information on the diversity strategy is also published in LBBW’s 2019 annual report.

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. 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 who are not appointed by employees. 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.

Each member of the board must have an up-to-date understanding of LBBW's business model and the related risks. This also includes an adequate understanding of areas for which the individual member is not directly or solely responsible but for which he/she is jointly responsible with another member. Each member must clearly understand LBBW's governance regulations, his/her role, responsibilities, the Group structure and any potential conflicts of interest arising from this. In addition, all members must have the skills to put a suitable corporate culture into practice.

As a basis for assessing professional qualifications, target requirements in the form of job profiles for the Supervisory Board and the Board of Managing Directors have been established on the basis of roles and responsibilities. The job profiles describe the responsibilities of the respective positions and the professional and personal requirements that LBBW considers to be met for the current members of the Board of Managing Directors and Supervisory Board.

Key professional requirements for members of the Board of Managing Directors:

- Ideally a degree or equivalent qualification in banking (in particular, economics, banking or law)
- Managerial authorization in accordance with the German Banking Act (KWG)
- Many years of relevant professional and management experience at a bank
- Knowledge of legal and regulatory requirements and banking regulation
- Knowledge and practical experience in integrated bank management and internal governance

Key personal requirements for members of the Board of Managing Directors:

- Leadership skills, highly motivated and genuine personality combined with team focus
- High level of personal integrity, loyalty, excellent reputation
- Strategic vision, negotiating skills, ability to deal with criticism and conflict, good judgment, decisive
- Strong communication skills, convincing nature and strong focus on customers and quality

Key professional requirements for members of the Supervisory Board:

- Ideally a degree or vocational apprenticeship
- Good knowledge of banking, financial services, financial markets and the financial sector
- Good knowledge of legal and regulatory requirements and banking regulation
- Good knowledge of LBBW's strategic focus and business areas
- Efficient and effective monitoring skills
- General understanding of accounting and auditing issues

Personal requirements for members of the Supervisory Board:

- Analytical skills, structured approach and good judgment
- High level of personal integrity, loyalty and excellent reputation
- Strategic vision, strong communication skills and willingness to develop skills
- Ability to critically analyze and scrutinize reports

Practical experience from previous positions and theoretical knowledge acquired through training is to be taken into account when evaluating individual suitability. Knowledge and skills that the member of the Board of Managing Directors or Supervisory Board can demonstrate he/she acquired while working for LBBW are also to be considered.

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 eleven 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 2019.

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 2019, 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 CRR.

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	Consolidation method for accounting purposes	Consolidation method for regulatory purposes				Description of the entity
		Full consolida-tion	Proportional consolidation	Neither consolidated nor deducted	Deducted	
Landesbank Baden-Württemberg	Full consolidation	X				Credit institution
MMV Bank GmbH	Full consolidation	X				Credit institution
Hypo Vorarlberg Bank AG	At equity/ accounted for using the equity method			X		Credit institution
LBBW Asset Management Investmentgesellschaft mbH	Full consolidation	X				Asset management company
LBBW México S.A. de C.V.	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
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 Real Estate GmbH	Full consolidation	X				Credit institution
Dritte LBBW US Real Estate 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	Full consolidation	X				Ancillary services undertaking
LBBW Service GmbH	Full consolidation	X				Ancillary services undertaking

1 Name changed to MMV Bank GmbH on 8 March 2019

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

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

The 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 FinRep figures are reported in accordance with the respective CoRep types of risk. Market price risk transactions are not reported more than once if they are reported under different types of risk in the CoRep report.

EUR million	carrying values, as reported in the published annual financial statements	Carrying values under the scope of regulatory consolida-tion	Carrying values of items:				
			Subject to the credit risk framework	Subject to the CCR framework	Subject to the securitization framework	Subject to the market risk framework	Not subject to capital requirements or subject to deduction from own funds
Assets							
Cash and cash equivalents	18,331	18,328	18,328	-	-	2,014	-
Financial assets measured at amortized cost:	167,202	164,252	163,624	-	511	35,054	80
Of which: Loans and advances to banks	55,801	55,613	55,613	-	-	11,535	0
Of which: Loans and advances to customers	110,320	107,558	107,327	-	114	23,271	80
Of which: Debentures and other fixed-income securities	1,082	1,082	684	-	397	248	-
Financial assets measured at fair value through other comprehensive income	28,648	29,109	28,877	-	59	2,489	1
Financial assets designated at fair value	1,170	1,170	1,170	-	-	44	-
Financial assets mandatorily measured at fair value through profit or loss	34,610	36,472	1,238	21,407	82	42,062	418
Shares in investments accounted for using the equity method	265	-	-	-	-	-	-
Portfolio hedge adjustment attributable to assets	839	839	-	-	-	-	839
Non-current assets and disposal groups held for sale	65	3	3	-	-	-	-
Intangible assets	198	197	-	-	-	-	197
Investment property	655	71	71	-	-	-	-
Property and equipment	814	727	727	-	-	0	-
Current income tax assets	126	125	125	-	-	2	-
Deferred income tax assets	1,089	1,112	996	-	-	1	116
Other assets	2,619	1,977	843	-	-	189	1,134
Total assets as at 31 December 2019	*256,630*	*254,383*	*216,004*	*21,407*	*652*	*81,856*	*2,785*
Total assets as at 31 December 2018	*241,214*	*238,216*	*205,169*	*17,553*	*570*	*75,563*	*5,498*

EUR million	carrying values, as reported in the published annual financial statements	Carrying values under the scope of regulatory consolidation	Carrying values of items: Subject to the credit risk framework	Subject to the CCR framework	Subject to the securitization framework	Subject to the market risk framework	Not subject to capital requirements or subject to deduction from own funds
Equity and liabilities							
Financial liabilities measured at amortized cost, of which	201,890	199,899	-	-	-	40,952	158,947
Deposits from banks	66,633	65,945	-	-	-	18,531	47,414
Deposits from customers	90,319	90,470	-	-	-	11,550	78,920
Securitized liabilities	38,815	37,362	-	-	-	9,818	27,544
Subordinated capital	6,123	6,123	-	-	-	1,053	5,070
Financial liabilities designated at fair value	6,757	6,757	-	-	-	2,277	4,480
Financial liabilities mandatorily measured at fair value through profit or loss	26,959	26,959	-	18,934	-	7,883	6,745
Portfolio hedge adjustment attributable to liabilities	486	486	-	-	-	-	486
Provisions	4,410	4,319	-	-	-	1	4,318
Liabilities from disposal groups	4	-	-	-	-	-	-
Current income tax liabilities	55	47	-	-	-	2	45
Deferred income tax liabilities	33	8	-	-	-	-	8
Other liabilities	2,113	1,902	-	-	-	1	1,901
Equity	13,923	14,006	-	-	-		14,006
Total equity and liabilities as at 31 December 2019	*256,630*	*254,383*	-	*18,934*	-	*51,115*	*190,936*
Total equity and liabilities as at 31 December 2018	*241,214*	*238,216*	-	*16,204*	-	*46,187*	*178,971*

Figure 7: EU LI1-Differences between accounting and regulatory basis of consolidation and mapping of financial statement categories with regulatory risk categories (Article 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)	**238,063**	**216,004**	**21,407**	**652**
Equity and liabilities carrying amount under the regulatory basis of consolidation (as per template EU LI1)	**18,934**	**-**	**18,934**	**-**
Total net amount under the regulatory basis of consolidation	238,063	216,004	21,407	652
Off-balance-sheet amounts	58,146	58,146	-	-
CCR – differences due to different netting rules	-8,360	-	-8,360	-
CCR – differences in the measurement of the derivatives	9,440	-	9,440	-
CCR – other differences in measurement	-136	-	-136	-
CR – differences in the measurement of securities financing transactions	20,106	20,106	-	-
CR – differences due to different valuation approaches	2,348	2,348	-	-
SEC – off-balance-sheet positions and derivatives	3,343	-	-	3,343
SEC – other differences in measurement	-6	-	-	-6
Exposure amounts considered for regulatory purposes 31 December 2019	*322,945*	*296,604*	*22,351*	*3,990*
Exposure amounts considered for regulatory purposes 31 December 2018	*306,304*	*282,932*	*19,312*	*4,059*

Figures 8: EU LI2 – Main sources of differences between regulatory exposure amounts and carrying amounts in the annual financial statements (Article 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, other non-credit obligation assets and the default fund contributions of a central counterparty (CCP)
- 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 and 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.

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.

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 Article 17 (3) of the Commission Delegated Regulation (EU) 2016/101.

4 Own funds and capital requirements (Articles 437 and 438 CRR)

4.1 Structure of own funds and applicable transitional provisions

All transitional rules for deductions from CET 1 capital were fully phased in in 2019. Silent partners' contributions issued before the introduction of CRR, which are accounted for as additional Tier 1 capital under transitional rules, were no longer eligible for full inclusion for the first time in the reporting year.

As at the end of 2019, LBBW is not exercising the option given in Article 473a (1–6) CRR to phase in the effects resulting from the first-time adoption of IFRS 9 in CET 1.

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 10 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 31/12/2019	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 31/12/2018	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	641	26 (1) (c)	-	802	l
Cumulative comprehensive income (and other reserves comprising unrealized gains and losses under the applicable accounting standards)	389	26 (1)	-	270	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	*12,755*		-	*12,796*	
Common equity Tier 1 (CET 1) capital: regulatory adjustments			-		
Additional measurement adjustments (negative amount)	-236	34, 105	-	-191	
Intangible assets (less corresponding tax liabilities) (negative amount)	-264	36 (1) (b), 37, 472 (4)	-	-223	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)	-93	36 (1) (c), 38, 472 (5)	–	-57	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	-197	36 (1) (d), 40, 150	-	-6	
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)		-22	
Gains and losses from derivative liabilities measured at fair value arising from the Bank's own credit risk	-56	33 (c)	-	-100	
Defined benefit pension fund assets (negative amount)	0	36 (1) (e), 41, 472 (7)	-	-	
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)	-	-	

EUR million Capital instruments	Amount on the day of disclosure 31/12/2019	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 31/12/2019	Reference
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	-		-	-	
of which deductions and filters for unrealized losses from debt instruments	-		-	-	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	-		-	-	m
of which deductions and filters for reserves for currency translation differences	-		-	-	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	-104	481	-	-78	
of which: irrevocable payment obligations for the bank levy and deposit insurance to DSGV	-104		-	-78	
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	*-964*		-	*-677*	
Common equity Tier 1 (CET 1) capital	*11,790*		-	*12,119*	

EUR million Capital instruments	Amount on the day of disclosure 31/12/2019	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 31/12/2018	Reference
Additional Tier 1 (AT1): instruments					
Capital instruments and related premiums	744	51, 52	-	-	p
Amount of items as defined in Article 484 (4) plus the related premium no longer eligible for inclusion in AT1	723	486 (3)	920	920	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	*1,467*		*920*	*920*	
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 capital with respect to items to be deducted from CET 1 capital during the transitional period provided for in Article 472 of Regulation (EU) No. 575/2013	-	472, 472 (3) (a), 472 (a), 472 (6), 472 (8) (a), 472 (9), 472 (10) (a), 472 (11) (a)	-	-	
of which material interim losses (net)	-		-	-	
of which intangible assets	-		-	-	Partial amount (a + b)
of which shortfall of provisions for expected losses	-		-	-	

EUR million Capital instruments	Amount on the day of disclosure 31/12/2019	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 31/12/2018	Reference
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	-		-	-	
Additional Tier 1 (AT1)	*1,467*		-	*920*	
Tier 1 (T1 = CET 1 + AT1)	*13,257*		-	*13,039*	
Tier 2 (T2): Instruments and reserves			-		
Capital instruments and related premiums	*5,123*	*62, 63*	-	*4,484*	*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)	-	-	
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	-	-	
Credit risk adjustments	136	62 (c) and (d)	-	192	
Tier 2 (T2) before regulatory adjustments	*5,260*		-	*4,676*	
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)	-	-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)	-		-	-	

EUR million Capital instruments	Amount on the day of disclosure 31/12/2019	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 31/12/2018	Reference
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 capital 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	-		-	0	
of which material interim losses (net)	-		-	-	
of which intangible assets	-		-	-	
of which shortfall of provisions for expected losses	-		-	0	
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	*-25*		-	*-25*	
Tier 2 (T2) capital as a whole	*5,235*		-	*4,651*	
Total capital (TC = T1 + T2)	*18,492*		-	*17,690*	
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	*80,484*		-	*80,348*	
Capital ratios and buffers			-		
CET 1 capital ratio (expressed as a percentage of the total risk exposure amount)	14.6	92 (2) (a), 465	-	15.1	
T1 capital ratio (expressed as a percentage of the total risk exposure amount)	16.5	92 (2) (b), 465	-	16.2	
Total capital ratio (expressed as a percentage of the total risk exposure amount)	23.0	92 (2) (c)	-	22.0	
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)	8.1	CRD 128, 129, 130	-	7.1	
of which capital conservation buffer	2.5		-	1.9	
of which countercyclical capital buffer	0.1		-	0.0	
of which systemic risk buffer	-		-	-	
of which buffer for global systemically relevant institutions (G-SRIs) or other systemically relevant institutions (A-SRIs)	1.0		-	0.7	
CET 1 available for the buffers (expressed as a percentage of the total risk exposure amount)	10.2	CRD 128	-	10.6	

EUR million Capital instruments	Amount on the day of disclosure 31/12/2019	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 31/12/2018	Reference
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)	489	36 (1) (h), 45, 46, 472 (10), 56 (c), 59, 60, 475 (4), 66 (c), 69, 70, 477 (4)	-	660	
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)	710	36 (1) (i), 45, 48, 470, 472 (11)	-	757	
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)	996	36 (1) (c), 38, 48, 470, 472 (c)	-	1,050	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	139	62	-	132	
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)	136	62	-	192	
Cap on the inclusion of credit risk adjustments in Tier 2 capital under the approach based on internal assessments	348	62	-	348	
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	723	484 (4), 486 (3) and (5)	-	964	
Amount excluded from AT1 due to cap (amount in excess of the cap after repayments and maturities)	-197	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
  - Subordinated AT1 bonds
- Tier 2 (T2) capital, which comprises the following items:
  - long-term subordinated liabilities (and related premiums)
  - participation rights (and related premiums).

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.

Explanation of changes from 2018 to 2019:
The LBBW Group's common equity Tier 1 capital declined slightly year on year. This was chiefly a result of actuarial losses and the fact that interim gains for the 2019 financial year were not included in accordance with Article 26 (1) CRR. In connection with this, the deductions intangible assets and the IRB shortfall saw a particular year-on-year increase as only the audited write-downs from 2018 were recognized and not the current write-downs from 2019. This was offset by the rise in the revaluation reverse and the retention of profits from 2018 that were not accounted for when reporting interim profits.

Additional Tier 1 capital saw a considerable EUR 547m increase against the previous year. This was due to issuing a EUR 750m AT1 bond for the first time in November 2019. This subordinated bond meets the conditions for Additional Tier 1 capital under CRR. By contrast, the previously eligible additional Tier 1 capital declined due to applying the transitional provisions in accordance with CRR.

Tier 2 capital was strengthened through the issue of three subordinated bonds of EUR 500m, AUD 100m and JPY 2bn. Subordinated Schuldscheine and registered bonds of EUR 74m were also placed on the market. Another positive effect for Tier 2 capital was generated by the inclusion of silent partners' contributions which no longer meet the conditions for AT1 in accordance with CRR but instead only the conditions for T2. The amortization to the day of Tier 2 capital components had a counteracting effect. Tier 2 capital thus rose by almost EUR 600m against the previous year (31 December 2018).

The changes impacting on CET 1 capital have an effect on all capital ratios. An increase in additional Tier 1 has an impact on the CET 1 capital ratio and the total capital ratio. The issue of Tier 2 capital only had a positive effect on the total capital ratio. 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).

Due to risk weighted assets remaining virtually unchanged and the changes in own funds components described above, the CET 1 capital ratio fell against the previous year. By contrast, LBBW's tier 1 capital ratio and total capital ratio both increased.

Transitional rules for deductions from CET 1 capital ceased to apply on 1 January 2019.

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.

	In accordance with the IFRS consolidated financial statements		In accordance with FINREP		
EUR million	**31/12/2019**	**31/12/2018**	**31/12/2019**	**31/12/2018**	**Reference**
Assets					
Intangible assets	**198**	**224**	**197**	**223**	
of which goodwill	-	-	-	-	a
of which other intangible assets	198	224	197	223	b
Deferred income tax assets	**1,089**	**1,133**	**1,112**	**1,167**	
of which from unused tax losses	93	71	84	59	c
of which from temporary differences	996	1,062	1,028	1,107	d
Equity and liabilities					
Financial liabilities designated at fair value	**6,757**	**7,613**	**6,757**	**7,613**	
of which subordinated liabilities	776	616	776	616	e
of which capital generated from profit-participation rights	121	119	121	119	f
Subordinated capital	**6,123**	**5,495**	**6,123**	**5,495**	
of which subordinated liabilities	4,927	4,308	4,927	4,308	g
of which typical silent partners' contributions	1,085	1,081	1,085	1,081	h
of which capital generated from profit-participation rights	111	106	111	106	i
Equity	**13,923**	**13,179**	**14,006**	**13,246**	
of which share capital	3,484	3,484	3,484	3,484	j
of which capital reserve	8,240	8,240	8,240	8,240	k
of which retained earnings	824	970	641	782	l
of which other income	155	45	393	286	
of which revaluation reserve	121	5	379	262	
of which revaluation reserve for equity investments	185	211	444	468	m
of which revaluation reserve for debt instruments	-64	-207	-64	-206	n
of which currency translation reserve	30	25	10	8	o
of which: additional equity components (Additional Tier 1)	745	-	745	-	p

Figure 10: Reconciliation of the Bank's own funds (Article 437 (1) (a) CRR)

In 2019, a debt security was issued that meets the CRR's requirements for eligibility as additional Tier 1 capital. It is recognized as an additional equity component.

4.3 Internal capital management

For a description of internal capital management, please refer to chapter 2.1, »Risk-oriented integrated bank management«.

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.

Transitional rules for the cover of the countercyclical capital buffer ceased to apply on 1 January 2019. As a result of this, the CET 1 capital cover of the total countercyclical capital buffer of all relevant countries was capped at 2.5% in 2019.

The countries that had a countercyclical capital buffer as at 31 December 2019 are shown in the following table.

	Countercyclical capital buffer in %	
Country	**31/12/2019**	**30/06/2019**
Bulgaria	0.50	0.00
Denmark	1.00	0.50
France	0.25	0.00
United Kingdom	1.00	1.00
Hong Kong	2.00	2.50
Ireland	1.00	0.00
Iceland	1.75	1.75
Lithuania	1.00	1.00
Norway	2.50	2.00
Sweden	2.50	2.00
Slovakia	1.50	1.25
Czech Republic	1.50	1.25

Figure 11: Countercyclical capital buffer

The countries with the greatest risk exposure and those that imposed a countercyclical capital buffer in 2019 are shown in the following table.

EUR million	General credit risk exposures		Risk exposures in the trading book		Securitization risk exposures		Capital requirements					
Breakdown by country	Risk exposure value KSA	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 KSA	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 in %	Countercyclical capital buffer ratio in %
Germany	17,209	71,077	2,924	-	948	2,423	3,305	33	53	3,392	69.74	-
Luxembourg	28	3,446	419	-	-	-	122	6	-	128	2.64	-
Netherlands	57	2,755	235	-	-	-	94	5	-	99	2.03	-
Austria	33	1,823	87	-	-	-	64	2	-	66	1.36	-
Switzerland	81	2,126	102	-	-	39	76	4	2	82	1.69	-
Canada	1	1,496	8	-	-	-	13	1	-	14	0.28	
USA	66	15,822	759	-	-	201	389	14	6	409	8.41	-
Bulgaria	0	7	-	-	-	-	1	-	-	1	0.01	0.00
Denmark	1	189	85	-	-	-	8	1	-	9	0.18	0.00
France	17	858	1,128	-	-	74	32	12	1	45	0.92	0.00
United Kingdom	224	2,330	1,989	-	-	41	97	12	3	112	2.31	0.02
Ireland	12	471	43	-	-	-	13	30	-	43	0.89	0.01
Iceland	0	2	-	-	-	-	0	-	-	0	0.00	0.00
Lithuania	0	42	7	-	-	-	0	0	-	0	0.00	0.00
Norway	2	2,658	424	-	-	-	24	4	-	28	0.58	0.01
Sweden	2	151	139	-	-	146	9	2	1	13	0.26	0.01
Slovakia	2	-	2	-	-	-	0	0	-	0	0.00	0.00
Czech Republic	7	44	7	-	-	-	2	0	-	2	0.04	0.00
Hong Kong	1	206	0	-	-	-	8	0	1	8	0.16	0.00
Other countries	977	10,568	1,025	-	-	116	385	24	5	412	8.49	0.00
Total 31 December 2019	*18,718*	*116,068*	*9,381*	-	*948*	*3,042*	*4,643*	*149*	*72*	*4,863*	*100.00*	*0.06*
Total 30 June 2019	*18,344*	*121,623*	*9,170*	-	*219*	*3,880*	*4,723*	*123*	*73*	*4,919*	*100.00*	*0.04*

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

LBBW's institution-specific countercyclical capital buffer is as follows:

Institution-specific countercyclical capital buffer	31/12/2019	30/06/2019
Total risk exposure in EUR m	80,484	82,198
Institution-specific ratio of countercyclical capital buffer in percent	0,061	0,036
Requirements of the institution-specific countercyclical capital buffer in EUR m	49	29

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.

Since 01 January 2018, equity exposures have been reported exclusively under the IRB approach. If a rating is available, this is reported in accordance with the internal rating. Otherwise, the simple risk weighted approach is applied with the corresponding risk weight. Significant investments in financial sector entities must be risk-weighted at 250%.

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 CRS, section 5.2
- Credit risks in IRB, chapter 5.3
- Counterparty credit risk, section 7

EUR million	RWA		Minimum capital requirements	
	31/12/2019	30/09/2019	31/12/2019	30/09/2019
Credit risk (excl. CCR)	*61,618*	*63,760*	*4,929*	*5,101*
of which under the standardized approach	10,986	10,788	879	863
of which under the foundation IRB approach (FIRB)	49,095	51,402	3,928	4,112
of which under the advanced IRB approach (AIRB)	-	-	-	-
of which equity in the IRB approach using the simple risk weighted approach or the IMA	1,538	1,571	123	126
Counterparty credit risk (CCR)	*3,741*	*4,273*	*299*	*342*
of which under the mark-to-market	2,442	2,864	195	229
of which under original exposure	-	-	-	-
of which under the standardized method	-	-	-	-
of which under the internal model method (IMM)	-	-	-	-
of which risk-weighted exposure amount for contributions to the default fund for a CCP	124	167	10	13
of which CVA	1,175	1,241	94	99
Settlement risk	19	1	2	0
Securitization exposures in the banking book (after application of the cap)	*897*	*914*	*72*	*73*
of which under the IRB approach	148	62	12	5
of which under the IRB supervisory formula approach (SFA)	-	-	-	-
of which under the internal assessment approach (IAA)	712	838	57	67
of which under the standardized approach	36	14	3	1
Market risk	*5,282*	*5,463*	*423*	*437*
of which under the standardized approach	2,133	2,385	171	191
of which under IMA	3,149	3,079	252	246
Large exposures	-	-	-	-
Operational risk	*4,661*	*4,661*	*373*	*373*
of which under the basic indicator approach	-	-	-	-
of which under the standardized approach	4,661	4,661	373	373
of which under the advanced measurement approach	-	-	-	-
Amounts below the thresholds for deductions (subject to 250 % risk weight)	*4,266*	*4,309*	*341*	*345*
Adjustment of floor	-	-	-	-
Total risk	*80,484*	*83,381*	*6,439*	*6,670*

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

The total amount of risk declined slightly quarter-on-quarter due to lower credit risk and counterparty credit risk.

EUR million	Specialized lending exposures					
Remaining maturity/Regulatory categories	On-balance-sheet amount	Off-balance-sheet amount	Risk weight	Exposure amount	RWA	Expected losses
Category 1						
Less than 2.5 years	76	0	50%	76	38	-
Equal to or more than 2.5 years	-	1	70%	1	1	0
Category 2						
Less than 2.5 years	66	0	70%	66	46	0
Equal to or more than 2.5 years	66	0	90%	67	60	1
Category 3						
Less than 2.5 years	3	0	115%	3	3	0
Equal to or more than 2.5 years	40	1	115%	41	46	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	0	-		0	-	0
Total 31 December 2019	*251*	*2*		*253*	*194*	*3*
Less than 2.5 years	145	0		145	87	0
Equal to or more than 2.5 years	106	2		108	107	2
Total 30 June 2019	*233*	*39*		*261*	*203*	*2*

Equities under the simple risk-weighted approach						
Categories	On-balance-sheet amount	Off-balance-sheet amount	Risk weight in %	Exposure amount	RWA	Capital requirements
Private equity exposures	766	-	190%	766	1,456	116
Exchange traded equity exposures	28	-	290%	28	81	7
Other equity exposures	0	-	370%	0	0	0
Total 31 December 2019	*794*	-		*794*	*1,538*	*123*
Total 30 June 2019	*786*	-		*786*	*1,508*	*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) ▪ Risk concentrations ▪ Stress tests
Risk monitoring and reporting	▪ Individual transaction level – Counterparty credit limits – 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 – Economic capital and economic capital limit – 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 procedure

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 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, expected loss is recognized after the transition to IFRS 9: For transactions in which creditworthiness has deteriorated significantly since conclusion, it is the EL over the entire residual term (level 2), otherwise it is the EL for one year (level 1). 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.

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 partly measured using the CVaR by way of concentration thresholds. 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.

As well as the operative limit systems, explicit concentration limits are in place for individual exposures and sectors to limit concentration risks.

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 Executive 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 half-yearly in-depth sector reports 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 standardized approach to credit risks

External credit rating assessments from the following ratings agencies are applied to calculate regulatory capital requirements under the credit risk standardized 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%, 250%, 370% or »Deducted« 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«.

The rise in risk exposures weighted at 0% is due to the increase in business volumes with banks in the Sparkassen Haftungsverbund association over the last six months.

EUR million	Risk weight in %										
Risk exposure classes	**0**	**20**	**35**	**50**	**70**	**75**	**100**	**150**	**1,250**	**Other**	**Total**	**Of which unrated**
Central governments or central banks	219	-	-	-	-	-	-	-	-	-	219	219
Regional governments or local authorities	1,103	0	-	-	-	-	-	-	-	-	1,103	1,103
Public-sector entities	0	50	-	-	-	-	0	-	-	-	50	7
Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-
International organizations	-	-	-	-	-	-	-	-	-	-	-	-
Institutions	32,043	600	-	32	-	-	1	-	0	-	32,676	32,620
Corporates	-	995	114	658	285	-	4,030	0	-	-	6,082	4,495
Retail business	-	-	-	-	-	6,194	-	-	-	-	6,194	6,194
Secured by mortgages on immovable property	-	-	4,134	141	-	-	-	-	-	-	4,276	4,276
Exposures in default	-	-	-	-	-	-	29	59	-	-	88	88
Items associated with particularly high risk	-	-	-	-	-	-	-	32	-	-	32	32
Covered bonds	15	-	-	-	-	-	-	-	-	-	15	15
Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-
Undertakings for collective investment	0	-	-	-	-	-	-	-	-	18	18	18
Equity exposures	-	-	-	-	-	-	-	-	-	-	-	-
Other items	5	-	-	-	-	-	73	-	-	-	77	77
Total 31 December 2019	*33,385*	*1,646*	*4,248*	*831*	*285*	*6,194*	*4,132*	*92*	*0*	*18*	*50,831*	*49,145*
Total 30 June 2019	*28,746*	*1,921*	*4,282*	*720*	*374*	*5,395*	*4,529*	*114*	*0*	-	*46,084*	*44,448*

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

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
	Start-ups	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 procedures result in a one-year probability of default in local currency (local currency PD). 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.

Ratings		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

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.

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

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 no less than 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.

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 national 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. It decides on 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 senior management and the management tiers below them 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 covered by this rating.

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 100m and all international corporate customers are assessed using the »corporates« rating. Domestic borrowers with sales of less than EUR 100m 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 the »Corporates« 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 50m 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.

Retail business exposure class

LBBW exposure positions which are classified as retail business are not currently allocated using the IRB approach.

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. The percentage distribution here is based on the EaD after collateralization and credit risk mitigation.

Exposure class	KSA in %	IRB in %	IRB implementa-tionplan	Total
Central governments	0.5	19.8	23.8	20.3
Institutions	12.2	21.4	33.0 [1]	33.6
Corporates – SMEs	0.5	2.7	3.2	3.2
Corporates – other	1.7	28.5	30.7	30.3
Corporates – specialized lending	0.0	6.7	8.0	6.7
Retail business	3.7	0.0	0.0	3.7
Securitizations	0.0	1.1	1.3 [2]	1.1
Other assets excl. loan commitments	0.0	0.7	0.0 [3]	0.7
Equity exposures	0.0	0.6	0.0 [4]	0.6
Overall result	*18.6*	*81.4*	*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) in conjunction with Section 13 (4) SolvV, specific securitization positions are excluded from the basis of assessment for the IRB coverage ratio
3 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
4 Under Section 13 (2) No. 1 SolvV, equity investments are excluded from the basis of assessment for the calculation of 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).

The following table shows IRB credit risk exposures by exposure class and PD ranges set by the regulator. LBBW does not recognize any exposures in the exposure class »Purchased corporate receivables« and so these are not included in the table. RWA density is the ratio of risk weighted assets to exposures after taking into account credit conversion factors and credit risk mitigation.

Balance sheet receivables in the exposure class »Corporates« declined in comparison to the previous period (reporting date: 30 June 2019). This is essentially due to repayments and expiring deals.

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 obligors
Central governments and central banks						
0.00 to < 0.15	41,474	3,322	62.11	47,244	0.00	2,080
0.15 to < 0.25	61	-	-	61	0.17	1
0.25 to < 0.50	65	-	-	65	0.39	1
0.50 to < 0.75	97	-	-	97	0.59	1
0.75 to < 2.50	0	89	4.78	5	0.92	5
2.50 to < 10.00	1	-	-	1	5.88	1
10.00 to < 100.00	-	9	50.00	4	10.00	1
100.00 (Default)	-			-		
Sub-total 31 December 2019	*41,697*	*3,420*	*60.59*	*47,476*	*0.01*	*2,090*
Sub-total 30 June 2019	*43,088*	*3,754*	*72.93*	*49,225*	*0.01*	*2,133*
Institutions						
0.00 to < 0.15	37,293	1,224	44.51	37,975	0.06	299
0.15 to < 0.25	2,492	121	33.79	2,229	0.17	31
0.25 to < 0.50	925	40	31.30	937	0.28	51
0.50 to < 0.75	276	19	20.00	280	0.59	17
0.75 to < 2.50	141	4	27.45	142	1.43	12
2.50 to < 10.00	0	18	49.24	9	2.97	3
10.00 to < 100.00	3	5	7.86	3	10.83	4
100.00 (Default)	1	-	-	1	100.00	1
Sub-total 31 December 2019	*41,131*	*1,430*	*42.80*	*41,576*	*0.08*	*418*
Sub-total 30 June 2019	*44,986*	*1,544*	*46.85*	*45,349*	*0.10*	*440*
Corporates – SMEs						
0.00 to < 0.15	2,834	1,360	16.60	3,002	0.07	2,860
0.15 to < 0.25	655	401	26.45	723	0.17	774
0.25 to < 0.50	1,275	632	23.75	1,409	0.32	1,492
0.50 to < 0.75	668	265	26.03	718	0.59	753
0.75 to < 2.50	940	491	34.52	1,052	1.30	1,414
2.50 to < 10.00	298	85	21.54	218	3.93	385
10.00 to < 100.00	165	53	55.20	72	15.45	265
100.00 (Default)	148	52	57.47	164	100.00	180
Sub-total 31 December 2019	*6,982*	*3,338*	*23.90*	*7,358*	*2.85*	*8,123*
Sub-total 30 June 2019	*7,060*	*3,280*	*26.63*	*7,477*	*3.38*	*8,284*

Average LGD in %	Average maturity	RWA	RWA density in %	Expected loss	Value adjustments and provisions
42.49	870	629	1.33	1	0
44.79	900	26	42.55	0	-
45.00	900	42	65.67	0	- 1
44.87	900	77	79.41	0	- 2
43.17	900	5	118.83	0	0
45.00	900	1	167.70	0	0
45.00	900	9	204.67	0	-
-	-	-	-	-	-
42.50	*870*	*791*	*1.67*	*1*	*- 3*
40.81	*838*	*911*	*1.15*	*2*	*- 3*
20.26	642	3,910	10.30	4	- 1
21.05	740	462	20.74	1	0
20.09	570	226	24.16	1	0
38.11	788	218	77.93	1	0
29.96	683	105	74.02	1	0
45.00	900	15	165.82	0	0
8.84	900	2	44.17	0	0
45.00	900	-	-	0	- 1
20.46	*647*	*4,938*	*11.88*	*7*	*- 2*
27.19	*540*	*5,468*	*14.61*	*9*	*- 3*
39.11	900	508	16.94	1	- 1
41.21	900	222	30.73	1	- 1
41.24	900	609	43.24	2	- 2
42.49	900	431	60.01	2	- 2
4.03	900	884	84.09	6	- 5
43.36	900	255	116.95	4	- 3
41.47	900	121	167.15	5	- 3
44.30	900	-		73	- 44
41.02	*900*	*3,031*	*41.19*	*92*	*- 60*
40.93	*900*	*3,110*	*41.22*	*114*	*- 109*

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 obligors
Corporates – specialized lending							
	0.00 to < 0.15	7,439	870	66.18	7,946	0.08	349
	0.15 to < 0.25	2,990	437	69.30	3,188	0.17	88
	0.25 to < 0.50	3,022	498	72.24	3,089	0.31	131
	0.50 to < 0.75	1,577	296	75.91	1,786	0.59	48
	0.75 to < 2.50	1,638	167	68.10	1,750	1.13	77
	2.50 to < 10.00	270	10	76.41	278	5.06	20
	10.00 to < 100.00	454	34	73.87	290	17.06	26
	100.00 (Default)	11			11	100.00	7
Sub-total 31 December 2019		*17,401*	*2,312*	*68.28*	*18,339*	*0.69*	*746*
Sub-total 30 June 2019		*18,441*	*2,620*	*71.57*	*19,774*	*0.91*	*808*
Corporates – other							
	0.00 to < 0.15	31,770	20,969	43.00	40,395	0.07	1,838
	0.15 to < 0.25	8,431	5,567	45.34	10,950	0.17	1,091
	0.25 to < 0.50	9,222	6,984	47.60	12,101	0.31	1,748
	0.50 to < 0.75	2,700	1,715	49.66	3,353	0.59	599
	0.75 to < 2.50	4,060	2,612	45.39	4,405	1.28	1,046
	2.50 to < 10.00	1,491	596	41.33	1,417	4.25	365
	10.00 to < 100.00	979	251	42.23	380	13.97	281
	100.00 (Default)	730	180	53.33	752	100.00	313
Sub-total 31 December 2019		*59,382*	*38,875*	*44.63*	*73,753*	*1.39*	*7,281*
Sub-total 30 June 2019		*68,097*	*38,362*	*48.15*	*83,512*	*1.13*	*7,747*
Equity exposures under IRB approach							
	0.00 to < 0.15	47	-	-	47	0.11	6
	0.15 to < 0.25	12	-	-	12	0.17	3
	0.25 to < 0.50	1	-	-	1	0.27	10
	0.50 to < 0.75	1	-	-	1	0.59	1
	0.75 to < 2.50	17	-	-	17	0.88	3
	2.50 to < 10.00	0	-	-	0	2.96	1
	10.00 to < 100.00	0	-	-	0	45.00	1
	100.00 (Default)	-	-	-	-		-
Sub-total 31 December 2019		*78*			*78*	*0.30*	*25*
Sub-total 30 June 2019		*69*	-	-	*69*	*0.43*	*25*
Total (all portfolios) 31 December 2019		*166,672*	*49,375*	*45.45*	*188,579*	*0.72*	*18,677*
Total (all portfolios) 30 June 2019		*181,740*	*49,560*	*49.69*	*205,406*	*0.62*	*19,437*

Average LGD in %	Average maturity	RWA	RWA density in %	Expected loss	Value adjustments and provisions
41.63	900	1,966	24.74	3	- 2
43.63	900	1,312	41.16	2	- 1
42.36	877	1,718	55.61	5	- 6
41.17	900	1,297	72.63	4	- 2
44.82	900	1,764	100.78	9	- 12
44.89	900	439	157.97	6	- 8
42.17	900	684	235.77	22	- 10
39.38	896	-	-	4	0
42.41	*900*	*9,180*	*50.06*	*56*	*- 40*
42.72	*900*	*10,036*	*48.31*	*75*	*- 45*
37.43	775	8,401	20.80	11	- 8
41.07	844	4,291	39.19	8	- 8
42.93	894	6,756	55.82	16	- 15
44.55	893	2,672	79.67	9	- 6
44.54	899	4,608	104.62	25	- 24
26.93	605	1,293	91.22	16	- 193
37.61	900	701	184.46	18	- 12
44.90	900	-	-	337	- 183
39.50	*816*	*28,721*	*38.94*	*441*	*- 449*
40.64	*813*	*29,219*	*38.66*	*351*	*- 508*
65.00	1,800	36	75.94	0	-
65.00	1,800	12	102.00	0	-
65.00	1,800	1	117.25	0	-
65.00	1,800	1	160.51	0	-
65.00	1,800	45	271.00	0	-
65.00	1,800	0	365.10	0	-
-	-	0	563.49	0	-
-	-	-	-	-	-
65.00	*1,800*	*96*	*123.44*	*0*	-
65.00	*1,800*	*77*	*111.01*	*0*	-
36.41	*804*	*46,757*	*24.79*	*598*	*- 555*
38.22	*778*	*48,820*	*21.63*	*551*	*- 668*

Figure 22: EU CR6 – IRB approach – Credit risk exposures by exposure class and PD range (Article 452 (e) to (g) CRR)

The following table shows the weighted average PD, arithmetic average PD by obligors, number of obligors at the beginning and end of the reporting period, the number of obligors who defaulted, new customers who defaulted in the reporting year and the average default rate of the last five years, shown in line with the combined PD ranges and by exposure class. LBBW does not recognize any exposures in the exposure class »Purchased corporate receivables« and so these are not included in the table.

EUR million		External rating					Number of obligors				
Exposure class	PD range	Moody's	Standard and Poor's	Fitch	Weighted average PD in %	Arith-metic average PD by obligor in %	End of the previous year	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	2,115	2,079	1	-	0.01
Investment grade	0.11% – 0.48%	Baa1 – Baa3	BBB + – BBB-	A- – BBB	0.14	0.14	1	3	-	-	-
Speculative grade	0.49% – 24.49%	Ba1 – B3	BB + – B-	BBB- – B-	1.02	3.11	13	8	-	-	-
Speculative grade	24.50% – 99.99%	Caa1 – Caa3	CCC + – C	CCC + – C	-	-	-	-	-	-	-
Default classes	100.00%	Ca – C	SD – D	RD – D	-	-	-	-	-	-	-
Total					*0.01*		*2,129*	*2,090*	*1*	-	
Institutions											
Investment grade	0.00% – 0.10%	Aaa – A3	AAA – A-	AAA – A	0.06	0.07	236	268	-	-	-
Investment grade	0.11% – 0.48%	Baa1 – Baa3	BBB + – BBB-	A- – BBB	0.18	0.30	118	113	-	-	0.24
Speculative grade	0.49% – 24.49%	Ba1 – B3	BB + – B-	BBB- – B-	0.99	2.32	37	36	-	-	-
Speculative grade	24.50% – 99.99%	Caa1 – Caa3	CCC + – C	CCC + – C	-	-	-	-	-	-	-
Default classes	100.00%	Ca – C	SD – D	RD – D	100.00	100.00	1	1	-	-	-
Total					*0.08*		*392*	*418*	-	-	
Corporates – SMEs											
Investment grade	0.00% – 0.10%	Aaa – A3	AAA – A-	AAA – A	0.06	0.22	2,235	2,229	65	-	0.59
Investment grade	0.11% – 0.48%	Baa1 – Baa3	BBB + – BBB-	A- – BBB	0.24	0.53	3,128	2,897	-	-	0.08
Speculative grade	0.49% – 24.49%	Ba1 – B3	BB + – B-	BBB- – B-	1.79	4.54	2,894	2,797	-	-	1.39
Speculative grade	24.50% – 99.99%	Caa1 – Caa3	CCC + – C	CCC + – C	37.65	38.00	17	20	-	-	3.85
Default classes	100.00%	Ca – C	SD – D	RD – D	100.00	80.11	227	180	-	-	-
Total					*2.85*		*8,501*	*8,123*	*65*	-	

		External rating					Number of obligors				
Exposure class	**PD range**	**Moody's**	**Standard and Poor's**	**Fitch**	**Weighted average PD in %**	**Arith-metic average PD by obligor in %**	**End of the previous year**	**End of the year**	**Defaulted obligors in the year**	**Of which new obligors**	**Average historical annual default rate in %**
Corporates – specialized lending											
Investment grade	0.00% – 0.10%	Aaa – A3	AAA – A-	AAA – A	0.06	0.07	305	274	7		0.34
Investment grade	0.11% – 0.48%	Baa1 – Baa3	BBB + – BBB-	A- – BBB	0.20	0.27	296	294	-	-	0.10
Speculative grade	0.49% – 24.49%	Ba1 – B3	BB + – B-	BBB- – B-	2.29	4.31	219	171	-	-	3.85
Speculative grade	24.50% – 99.99%	Caa1 – Caa3	CCC + – C	CCC + – C	-	-	-		-	-	100.00
Default classes	100.00%	Ca – C	SD – D	RD – D	100.00	100.00	13	7	-	-	-
Total					*0.69*		*833*	*746*	*7*	-	
Corporates – other											
Investment grade	0.00% – 0.10%	Aaa – A3	AAA – A-	AAA – A	0.06	0.18	1,219	1,177	75	-	0.01
Investment grade	0.11% – 0.48%	Baa1 – Baa3	BBB + – BBB-	A- – BBB	0.21	0.66	3,474	3,500	-	-	0.00
Speculative grade	0.49% – 24.49%	Ba1 – B3	BB + – B-	BBB- – B-	1.97	6.18	2,226	2,290	-	-	0.02
Speculative grade	24.50% – 99.99%	Caa1 – Caa3	CCC + – C	CCC + – C	45.00	60.00	2	1	-	-	0.14
Default classes	100.00%	Ca – C	SD – D	RD – D	100.00	100.00	313	313	-	-	-
Total					*1.39*		*7,234*	*7,281*	*75*	-	
Equity exposures											
Investment grade	0.00% – 0.10%	Aaa – A3	AAA – A-	AAA – A	0.09	0.14	5	4	-	-	-
Investment grade	0.11% – 0.48%	Baa1 – Baa3	BBB + – BBB-	A- – BBB	0.13	3.01	21	15	-	-	-
Speculative grade	0.49% – 24.49%	Ba1 – B3	BB + – B-	BBB- – B-	0.88	1.36	4	5	-	-	-
Speculative grade	24.50% – 99.99%	Caa1 – Caa3	CCC + – C	CCC + – C	45.00	45.00	-	1	-	-	-
Default classes	100.00%	Ca – C	SD – D	RD – D	-	-	-		-	-	-
Total					*0.30*		*30*	*25*	-	-	

Figure 23: Backtesting of probability of default (PD) per exposure class (Article 452 (i) CRR).

The following table shows the change in RWAs of risk exposures under the IRB approach as at 31 December 2019 within the last quarter. The fall in RWA is due primarily to repayments and expiring deals.

EUR m	RWA amounts	Capital requirements
RWAs 30 September 2019	*57,281*	*4,582*
Asset size	-2,025	-162
Asset quality	-17	-1
Model updates	127	10
Methodology and policy	-	-
Acquisitions and disposals	-	-
Foreign exchange movements	-124	-10
Other	-344	-28
RWAs 31 December 2019	*54,899*	*4,392*

Figure 24: EU CR8 – RWA flow statements of credit risks under the IRB approach (Article 438 (d) CRR and Article 92 (3) (a) CRR)

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.

Unlike in the previous year, audited write-downs for the previous year are included in net exposures. Total and average amounts in the IRB exposure class »Central governments and central banks« declined in comparison to the previous year (31 December 2018), mainly due to the decrease in deposits with central banks. The upturn in the IRB exposure classes »Corporates«" and »Specialized lending« is due chiefly to new business in the first half of the year.

The two tables below show risk exposures after allowances for losses on loans and advances. The first table provides a break-down by country, geographic area and exposure class in accordance with CRR. Significant countries which are listed separately are defined as countries in which LBBW has an exposure of over EUR 1bn. »Other countries« are listed separately in the country allocation in the Appendix.

The second table provides a break-down by sector and exposure class in accordance with CRR. The grouping of exposures by industry is in accordance with the Bundesbank industry key which was applicable in 2019. 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	Net value of risk exposures at the end of the reporting period 31/12/2019	31/12/2018	Average net value of risk exposures over the reporting period 01/01/2019 – 31/12/2019	01/01/2018 – 31/12/2018
Central governments or central banks	46,110	55,210	52,577	61,749
Institutions	54,220	45,222	61,626	57,921
Corporates	133,311	125,593	139,415	119,260
of which specialized lending exposures	20,077	21,143	21,043	19,164
of which SMEs	10,528	10,677	10,534	10,496
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	1,583	1,601	1,592	1,569
Other non credit obligation assets	1,900	2,879	2,211	2,705
Total amount under IRB approach	*237,123*	*230,505*	*257,422*	*243,204*
Central governments or central banks	6	2	3	10
Regional governments or local authorities	129	167	194	195
Public-sector entities	572	165	492	236
Multilateral development banks	-	-	-	-
International organizations	-	-	-	-
Institutions	33,875	30,068	31,279	31,523
Corporates	8,491	8,650	8,730	9,624
of which SMEs	1,780	1,740	1,963	1,640
Retail business	9,609	8,807	9,168	8,763
of which SMEs	2,118	1,787	1,913	1,784
Secured by mortgages on immovable property	4,282	4,511	4,332	4,730
of which SMEs	129	129	130	138
Exposures in default	99	103	104	131
Items exposed to particularly high risk	32	58	48	30
Covered bonds	15	-	12	-
Institutions and corporates with a short-term credit assessment	-	-	0	0
Undertakings for collective investment	18	-	4	-
Equity exposures	-	-	-	-
Other items	77	43	73	43
Total amount under the Standardized Approach	*57,205*	*52,573*	*54,439*	*55,285*
Total amount	*294,329*	*283,078*	*311,861*	*298,488*

Figure 25: EU CRB-B – Total and average amount of exposures (Article 442 (c) CRR)

EUR million Exposure class	Total Europe	Germany	Denmark	Finland	France	United Kingdom	Italy	Luxem-bourg	Nether-lands	Norway	Austria	Sweden
Central governments or central banks	42,766	36,436	354	28	61	13	1,063	-	-	332	248	-
Institutions	46,959	6,302	772	1,095	14,501	12,672	33	2,373	1,557	1	1,492	1,654
Corporates	114,367	90,737	204	230	868	2,247	191	3,530	2,982	2,666	2,332	161
of which specialized lending exposures	14,893	6,241	34	67	268	1,706	73	2,813	998	138	63	54
of which SMEs	10,287	10,030		2		1	-	14	5	-	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	1,551	1,541	-	-	0	1	-	0	-	-	-	-
Other non credit obligation assets	1,878	1,697	-	-	-	3	-	-	15	-	121	-
Total amount under IRB approach	*207,521*	*136,713*	*1,331*	*1,352*	*15,430*	*14,937*	*1,287*	*5,903*	*4,554*	*2,999*	*4,193*	*1,816*
Central governments or central banks	5	5	0	-	1	-	0	-	-	-	0	0
Regional governments or local authorities	129	129	-	-	-	-	-	-	-	-	-	-
Public-sector entities	572	572	-	-	-	-	-	-	-	-	-	-
Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-
International organizations	-	-	-	-	-	-	-	-	-	-	-	-
Institutions	33,868	33,862	-	-	0	4	-	0	-	-	0	-
Corporates	7,430	6,059	4	14	53	277	74	232	143	8	57	14
of which SMEs	1,777	1,676	-	-	-	-	-	90	0	-	-	-
Retail business	9,585	9,517	0	0	8	2	2	1	1	0	4	0
of which SMEs	2,118	2,117	-	-	0			0	0		0	
Secured by mortgages on immovable property	4,261	4,201	0	-	2	3	0	21	2	0	2	0
of which SMEs	129	128	0	-	0	-	-	-	-	-	0	-
Exposures in default	97	95	-	1	0	0	0	0	0	0	0	0
Items associated with particularly high risk	32	32	-	-	-	-	-	-	-	-	-	-
Covered bonds	15	15	-	-	-	-	-	-	-	-	-	-
Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-
Undertakings for collective investment	18	18	-	-	-	-	-	-	-	-	-	-
Equity exposures	-		-	-	-	-	-	-	-	-	-	-
Other items	76	75	-	-	-	-	-	-	-	-	-	-
Total amount under the Standardized Approach	*56,088*	*54,579*	*4*	*15*	*65*	*286*	*77*	*254*	*146*	*8*	*63*	*14*
Total 31 December 2019	*263,609*	*191,292*	*1,335*	*1,367*	*15,494*	*15,223*	*1,363*	*6,157*	*4,700*	*3,007*	*4,256*	*1,830*
Total 31 December 2018	*254,104*	*190,434*	*831*	*1,277*	*10,455*	*15,461*	*1,569*	*4,243*	*4,264*	*2,406*	*3,680*	*1,460*

Switzer-land	Other countries – Europe [1]	Total America	Canada	USA	Other countries – America	Total Asia /Pacific region	China	Republic of Korea	Other countries – Asia /Pacific region	Total Other countries – other	Other countries – Other	Total
958	3,273	2,146	-	2,085	61	1,164	-	442	722	34	34	46,110
2,875	1,632	4,936	2,387	2,375	174	2,325	1,036	45	1,244	-	-	54,220
3,021	5,199	13,391	390	12,152	849	4,834	249	1,080	3,505	719	719	133,311
24	2,414	5,096	365	4,490	242	88	-	-	88	-	-	20,077
126	90	136	-	17	119	105	1	17	87	-	-	10,528
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
7	2	29	-	12	16	3	3	-	-	1	1	1,583
41	0	16	-	16	0	6	-	2	4	-	-	1,900
6,902	*10,105*	*20,518*	*2,776*	*16,641*	*1,100*	*8,331*	*1,288*	*1,568*	*5,475*	*754*	*754*	*237,123*
-	0	-	-	-	-	-	-	-	-	-	-	6
-	0	-	-	-	-	-	-	-	-	-	-	129
-	-	0	-	-	0	-	-	-	-	-	-	572
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
0	2	7	-	2	5	-	-	-	-	-	-	33,875
85	412	898	3	105	790	162	12	5	146	1	1	8,491
1	9	1	-	-	1	2	-	-	2	-	-	1,780
41	8	10	0	8	2	13	3	0	10	1	1	9,609
0	0	0	-	0	-	0	-	-	0	-	-	2,118
21	7	11	0	9	1	10	2	1	7	0	0	4,282
-	0	-	-	-	-	-	-	-	-	-	-	129
0	1	2	0	0	2	0	-	-	0	0	0	99
-	-	-	-	-	-	-	-	-	-	-	-	32
-	-	-	-	-	-	-	-	-	-	-	-	15
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	18
-	-	-	-	-	-	-	-	-	-	-	-	-
1	-	2	-	-	2	-	-	-	-	-	-	77
148	429	929	4	124	802	185	16	5	163	3	3	57,205
7,050	*10,534*	*21,447*	*2,780*	*16,765*	*1,902*	*8,516*	*1,304*	*1,573*	*5,639*	*757*	*757*	*294,329*
7,140	10,861	21,660	1,765	17,990	1,905	6,735	1,191	1,677	3,867	579	579	283,078

1) Risk exposures to Ireland and Turkey were included individually in the previous year and Denmark was given under »Other countries – Europe«.

Figure 26: EU CRB-C – Geographic distribution of exposures (Article 442 (d) CRR)

EUR million Exposure class	Central banks and banks	Other financial institutions	Other financial and insurance services	Public administration, defense, social security	Private households	Real estate and housing	Energy supplies	Mechanical engineering
Central governments or central banks	23,217	2,395	-	16,639	0	128	498	-
Institutions	44,780	7,134	2,057	161	0	73	-	-
Corporates	5,564	10,402	7,873	291	1,068	28,395	6,062	6,545
of which specialized lending exposures	-	647	141	2	0	13,616	3,784	20
of which SMEs	-	91	57	78	365	4,027	160	640
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	6	20	1	-	0	18	-	-
Other non credit obligation assets	245	0	-	82	681	13	-	3
Total amount under IRB approach	*73,813*	*19,951*	*9,932*	*17,172*	*1,749*	*28,626*	*6,560*	*6,548*
Central governments or central banks	5	-	-	2	-	0	0	-
Regional governments or local authorities	-	-	-	118	0	-	-	-
Public-sector entities	0	-	-	471	89	-	0	-
Multilateral development banks	-	-	-	-	-	-	-	-
International organizations	-	-	-	-	-	-	-	-
Institutions	33,875	2	-	-	-	-	-	-
Corporates	46	767	539	33	562	278	181	184
of which SMEs		21	12	-	35	57	22	26
Retail business	0	366	43	2	6,454	103	15	77
of which SMEs	-	3	19	2	40	74	9	76
Secured by mortgages on immovable property	-	2	17	-	3,872	38	1	1
of which SMEs	-	1	3	-	39	8	0	0
Exposures in default	-	1	0	0	30	4	0	1
Items associated with particularly high risk	-	32	-	-	-	-	-	-
Covered bonds	15	-	-	-	-	-	-	-
Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-
Undertakings for collective investment	-	-	-	-	-	-	-	-
Equity exposures	-	-	-	-	-	-	-	-
Other items	6	-	-	0	-	-	-	-
Total amount under the Standardized Approach	*33,948*	*1,169*	*600*	*627*	*11,007*	*422*	*198*	*263*
Total 31 December 2019	*107,762*	*21,120*	*10,532*	*17,799*	*12,756*	*29,048*	*6,758*	*6,811*
Total 31 December 2018	*98,753*	*20,879*	*14,596*	*18,656*	*12,639*	*29,171*	*6,287*	*6,576*

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**
-	14	19	-	28	264	2,036	873	46,110
-	0	15	-	-	-	-	-	54,220
4,279	19,929	12,767	8,747	5,170	3,240	582	12,397	133,311
1	62	388	50	19	697	32	618	20,077
65	1,542	684	607	144	199	83	1,786	10,528
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	57	-	28		1	1,453	1,583
-	4	-	0	-	-	-	872	1,900
4,279	*19,948*	*12,858*	*8,747*	*5,226*	*3,503*	*2,619*	*15,595*	*237,123*
-	0	0	0	0	-	-	-	7
-	-	-	-	-	-	0	10	129
-	-	0	-	-	-	0	11	572
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	0	-	-	-	-	33,876
918	1,276	631	628	65	431	128	1,823	8,491
1	254	74	141	23	195	28	891	1,780
10	490	369	419	72	136	94	958	9,609
9	465	210	342	53	122	92	602	2,118
0	12	141	25	16	3	0	152	4,282
0	5	19	11	4	1	0	36	129
1	13	4	11	0	4	0	28	99
-	-	-	-	-	-	-	-	32
-	-	-	-	-	-	-	-	15
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	18	18
-	-	-	-	-	-	-		-
-	-	-	-	-	-	-	71	78
930	*1,792*	*1,145*	*1,081*	*154*	*574*	*222*	*3,072*	*57,206*
5,209	*21,740*	*14,003*	*9,829*	*5,379*	*4,077*	*2,842*	*18,667*	*294,329*
5,005	*21,021*	*13,815*	*9,566*	*5,146*	*3,635*	*3,080*	*14,251*	*283,078*

Figure 27: EU CRB-D – Sector risk concentrations (Article 442 (e) CRR)

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 EBA 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 31/12/2019**	**Total 31/12/2018**
Central governments or central banks	21,329	4,064	2,836	14,461	-	42,690	51,400
Institutions	6,092	28,185	13,020	5,494	-	52,790	43,830
Corporates	7,225	20,469	29,855	31,260	-	88,811	82,428
of which specialized lending exposures	96	1,362	7,408	8,900	-	17,766	18,781
of which SMEs	398	699	1,630	4,472	-	7,199	7,077
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	-	-	-	-	1,583	1,583	1,601
Other non credit obligation assets	-	-	-	-	1,900	1,900	2,879
Total amount under IRB approach	*34,647*	*52,718*	*45,711*	*51,215*	*3,482*	*187,773*	*182,139*
Central governments or central banks	6	0	0	0	-	6	2
Regional governments or local authorities	10	5	17	5	-	37	154
Public-sector entities	0	11	261	277	-	550	131
Multilateral development banks	-	-	-	-	-	-	-
International organizations	-	-	-	-	-	-	-
Institutions	2,322	6,151	2,822	20,360	-	31,655	27,539
Corporates	251	3,122	1,983	1,830	-	7,186	7,387
of which SMEs	53	100	848	428	-	1,429	1,585
Retail business	304	423	1,824	3,753	-	6,305	5,504
of which SMEs	30	72	1,256	382	-	1,741	1,403
Secured by mortgages on immovable property	19	42	295	3,915	-	4,270	4,499
of which SMEs	8	5	23	92	-	127	129
Exposures in default	40	6	27	22	-	94	100
Items exposed to particularly high risk	32	-	-	-	-	32	58
Covered bonds	-	-	-	15	-	15	-
Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-
Undertakings for collective investment	-	-	-	-	18	18	0
Equity exposures	-	-	-	-	-	0	0
Other items	20	-	-	-	57	77	43
Total amount under the Standardized Approach	*3,004*	*9,762*	*7,229*	*30,175*	*75*	*50,245*	*45,415*
Total amount	*37,651*	*62,480*	*52,939*	*81,391*	*3,557*	*238,018*	*227,554*

Figure 28: 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 the current figures used for COREP reporting as at the reporting date 31 December 2019. 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.

The lower volume of the IRB exposure class »Institutes« in the second half of 2019 is due primarily to securities financing transactions maturing and deals expiring. The decline in the volume in the IRB exposure class »Corporates« chiefly reflects repayments, expiring deals and changes in ratings.

EUR million	Gross carrying amounts of								
Exposure class	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustments	General credit risk adjustments	Accumu-lated write-offs	Credit risk adjustment charges in the reporting period	Net values 31/12/2019	Net values 30/06/2019
Central governments or central banks	-	46,113	3	-	-	0	46,110	47,898
Institutions	1	54,222	2	-	-	0	54,220	62,484
Corporates	1,121	132,739	550	-	-7	84	133,311	140,968
of which specialized lending exposures	11	20,106	40	-	-	1	20,077	21,470
of which SMEs	200	10,387	60	-	-	22	10,528	10,540
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	-	1,583	-	-	-	-	1,583	1,597
Other assets excl. loan commitments	-	1,900	-	-	-	-	1,900	2,156
Total amount under IRB approach	*1,122*	*236,556*	*555*	-	*-7*	*84*	*237,123*	*255,103*
of which credits[1]	890	147,898	503	-	-7	55	148,286	160,413
of which debt securities[1]	-	37,507	4	-	-	0	37,502	41,213
of which off-balance-sheet exposures[1]	232	49,166	48	-	-	29	49,350	49,531
Central governments or central banks	0	6	0	-		0	6	1
Regional governments or local authorities	-	129	0	-	0	0	129	213
Public-sector entities	0	573	0	-		0	572	643
Multilateral development banks	-	-	-	-		-	-	-
International organizations	-	-	-	-		-	-	-
Institutions	-	33,876	0	-	0	0	33,875	30,472
Corporates	116	8,507	99	-	0	-6	8,523	8,829
of which SMEs	12	1,782	6	-	0	1	1,788	2,180
Retail business	100	9,632	56	-	-10	4	9,675	8,916
of which SMEs	23	2,125	12	-	-8	4	2,135	1,725
Secured by mortgages on immovable property	-	4,287	5	-	-	0	4,282	4,335
of which SMEs	-	129	0	-	-	0	129	128
Exposures in default	216		117	-	-	-5	99	106
Items associated with particularly high risk	-	32	-	-	-	-	32	59
Covered bonds	-	15	-	-	-	-	15	-
Institutions and corporates with a short-term credit assessment	-		-	-	-	-	-	0
Undertakings for collective investment	-	18	-	-	-	-	18	-
Equity exposures	-		-	-	-	-	-	-
Other items	-	77	-	-	-	-	77	85
Total amount under the Standardized Approach	*216*	*57,151*	*161*	-	*-11*	*-7*	*57,205*	*53,553*
of which credits[1]	211	49,539	106	-	-11	-6	49,643	46,066
of which debt securities[1]	-	167	0	-	-	-	167	45
of which off-balance-sheet exposures[1]	5	6,967	7	-	-	-1	6,965	7,004
Total	*1,338*	*293,707*	*716*	-	*-17*	*77*	*294,329*	*308,656*
of which credits[1]	1,101	197,437	609	-	-17	49	197,929	206,480
of which debt securities[1]	-	37,673	4	-	-	0	37,669	41,259
of which off-balance-sheet exposures[1]	237	56,133	55	-	-	27	56,315	56,535

1 figures in accordance with FINREP

Figure 29: EU CR1-A – Credit quality of exposures by exposure classes and instruments (Article 442 (g) and (h) CRR)

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 2019. 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 amounts of							
Industry sector	**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 31/12/2019**	**Net values 30/06/2019**
Central banks and banks	21	107,748	6	-	-	-7	107,762	110,311
Other financial institutions	18	21,111	8	-	-	-5	21,120	20,757
Other financial and insurance services	4	10,531	4	-	0	0	10,532	24,816
Public administration, defense, social security	0	17,804	4	-	-	-1	17,799	19,181
Private households	59	12,731	34	-	-2	1	12,756	12,495
Real estate and housing	36	29,074	62	-	-1	4	29,048	29,704
Energy supplies	5	6,776	24	-	0	-2	6,758	6,618
Mechanical engineering	143	6,690	23	-	0	3	6,811	7,268
Automotive production including components	137	5,143	71	-	0	32	5,209	5,538
Other manufacturing	435	21,433	128	-	-4	35	21,740	21,962
Professional, scientific and technical activities	152	13,906	54	-	-1	12	14,003	13,633
Trade, maintenance and repair of motor vehicles	174	9,747	93	-	-5	11	9,829	9,634
Information and communication	10	5,375	6	-	0	0	5,379	6,189
Transport and storage	8	4,074	6	-	0	-1	4,077	3,443
Water supply, waste-water and waste management	6	2,842	7	-	0	-1	2,841	3,062
Other sectors	130	18,723	185	-	-4	-4	18,667	14,046
Total	*1,338*	*293,707*	*716*	-	*-17*	*77*	*294,329*	*308,656*

Figure 30: EU CR1-B – Credit quality of exposures by industry sector (Article 442 (g) and (h) 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 amounts of							
Countries	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustments	General credit risk adjustments	Accumu-lated write-offs	Credit risk adjustment charges in the reporting period	Net values 31/12/2019	Net values 30/06/2019
Total Europe	*1,267*	*263,033*	*692*	-	*-17*	*80*	*263,609*	*261,915*
Germany	1,163	190,700	572	-	-17	78	191,292	181,775
Denmark	-	1,335	0	-	-	0	1,335	1,404
Finland	1	1,366	1	-	-	0	1,367	1,599
France	1	15,494	1	-	0	0	15,494	18,798
United Kingdom	0	15,262	39	-	0	1	15,223	17,443
Italy	0	1,364	1	-	-	0	1,363	1,620
Luxembourg	0	6,159	2	-	-	0	6,157	5,300
Netherlands	3	4,699	3	-	-	2	4,700	5,066
Norway	0	3,007	0	-	-	0	3,007	2,732
Austria	0	4,258	3	-	0	1	4,256	4,036
Sweden	0	1,831	0	-	-	0	1,830	1,841
Switzerland	2	7,051	3	-	0	1	7,050	7,950
Other countries – Europe	96	10,506	68	-	0	-4	10,534	12,351
Total America	*69*	*21,395*	*16*	-	-	*-2*	*21,447*	*38,114*
Canada	0	2,780	0	-	0	0	2,780	2,412
USA	19	16,757	11	-	0	1	16,765	33,863
Other countries – America	50	1,858	5	-	0	-3	1,902	1,839
Total Asia/Pacific region	*1*	*8,520*	*5*	-	-	*1*	*8,516*	*8,017*
China	-	1,304	0	-	0	0	1,304	1,401
Republic of Korea	-	1,574	0	-	-	0	1,573	1,708
Other countries – Asia/Pacific region	1	5,642	5	-	-	1	5,639	4,907
Total other countries	*0*	*760*	*3*	-	-	*-1*	*757*	*611*
Other countries – Other	0	760	3	-	-	-1	757	611
Total	*1,338*	*293,707*	*716*	-	*-17*	*77*	*294,329*	*308,656*

Figure 31: EU CR1-C – Credit quality of exposure by country and geographic area (Article 442 (g) and (h) CRR)

Loss estimates and actual losses in traditional lending business

The table below compares expected and actual losses for the transactions recognized using the IRB approach in accordance with CRR. The disclosures relate to traditional lending business (excluding securities in the banking book and securitizations, also excluding derivatives) for the exposure class.

For this process, actual losses are defined as the total of direct write-downs and the net of additions and reversals of specific valuation allowances or provisions less recoveries on receivables that have been written down. Expected losses (EL) are calculated in accordance with the provisions under the IRB approach and include only lending transactions that were considered performant as at 1 January 2019 (probability of default (PD) lower than 100%).

EUR million	Period		Period		Period	
	01/01/2019 to 31/12/2019		01/01/2018 to 31/12/2018		01/01/2017 to 31/12/2017	
Exposure class	Expected losses (EL)	Actual losses	Expected losses (EL)	Actual losses	Expected losses (EL)	Actual losses
Central governments	2	0	1	0	2	3
Institutions	5	1	13	2	5	5
Total corporates	164	58	129	64	159	85
- of which corporates	88	50	72	26	79	60
- of which SMEs	21	5	20	12	33	25
- of which specialized lending exposures	54	3	37	26	47	0
Retail business	-	-	-	-	-	-
Total	*170*	*59*	*143*	*65*	*165*	*92*

Figure 32: Expected and actual losses in the lending business

5.6 Non-performing exposures and loans

5.6.1 Overview

Definitions

An exposure is considered a ***non-performing exposure*** if it is unlikely that the debtor will meet its commitments without realizing the collateral (unlikely to pay) or if the key exposure is more than 90 days past due. It should also be noted that LBBW states that former non-performing exposures with forbearance measures are to be classified as non-performing in the event of a 30 day delay or a new forbearance measure within the probationary period.

For the purposes of identifying non-performing exposures, the ECB's guidance on non-performing loans dated March 2017 published »UTP indicators« (unlikely to pay). These are based not so much on quantitative criteria as on events, which ultimately result in a classification as non-performing.

Initially, an UTP indicator requires only that a case-by-case assessment is conducted as to whether it is a case of default – this means that it does not necessary lead to the result »default«. LBBW uses the following UTP indicators:

- Loan termination or early repayment
- Unlikely to pay
  - The bank has already called any collateral including a guarantee
  - Legal action has already been taken or there has already been execution or enforced execution to collect the receivable
  - Loans are deferred or extended beyond the economic life
  - Sources of the borrower's regular income are no longer available to meet installments payments, the customer becomes unemployed and repayment is unlikely
  - There are legitimate concerns regarding the borrower's ability to generate stable and sufficient cash flows in the future
  - Extrajudicial settlement or repayment negotiations (e.g. standstill agreements)
- Rescheduling/restructuring
  - The bank waives (partially or conditionally) its right to charge interest
  - Restructuring where a significant part of the debt is canceled
  - Restructuring with conditional debt relief

- Insolvency
  - The bank or the lead manager files for insolvency
  - The debtor has filed for insolvency
  - A third party has filed for insolvency
- Direct write-down
- A substantial credit risk adjustment is recognized due to a deterioration in the credit rating since the loan was granted
- The receivable is sold at a loss due to the credit rating
- Cases of fraud
- Early warning criteria that result in classification as »intensive support«

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
- impairment

A loan is considered ***restructured or forborne*** if it is classified as a forborne exposure (FBE). This applies when the following conditions are met:

- The debtor faces or is about to face financial difficulties, and
- The bank makes concessions towards the debtor which are justified by the financial difficulties.

Concessions by the bank that are justified by the debtor's financial difficulties can, as a UTP indicator, lead to a credit default within the regulatory definition and represent objective evidence of impairment. Restructured or forborne risk exposures can be classified both as performing exposures and non-performing exposures.

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.

A risk exposure is considered ***impaired*** when there is objective evidence of impairment and when a level 3 impairment loss has been recognized in accordance with the accounting provisions in place at LBBW (IFRS). A more in-depth explanation of the provisions and methods and a detailed description of what constitutes objective evidence of impairment under IFRS 9 are provided in the next section »Credit risk adjustments«.

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. The number of days past due is calculated on the basis of consecutive days past due, calculated at customer level taking into account the materiality threshold. An amount past due is regarded as material and relevant if it exceeds 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).

Credit risk adjustments

Methods of loan loss provisioning

LBBW has been applying the IFRS 9 (Financial Instruments) standard, in the version adopted by the European Union, since 1 January 2018.

The IFRS 9 impairment methods cover only those financial instruments recognized in the statement of financial position at amortized cost (financial assets measured at amortized cost) and financial assets measured at fair value through other comprehensive income. These can be loans, receivables or securities, provided these are considered debt instruments. The provisions also apply to lease receivables and off-balance-sheet transactions such as sureties, financial guarantees and loan commitments, where these are not measured at fair value through profit or loss (FVR).

They do not apply to financial instruments that do not meet the cash flow criteria and equity instruments that must be measured at fair value through profit or loss (FVR) under IFRS 9 or financial instruments that are voluntarily designated for measurement at fair value through profit or loss (FVO).

The introduction of IFRS 9 replaced the incurred loss model with an expected loss model. Under this model, financial instruments are allocated to one of three loan loss provisions levels:

- Level 1: Impairment losses included at the amount of the expected losses resulting from potential loss events in the next twelve months.
  At the beginning of the transaction, the financial instruments are generally allocated to level 1.
- Level 2: Impairment losses equal to the expected losses over the entire remaining term of the financial instrument.
  If the financial instrument's default risk has significantly increased since it was recognized, the financial instrument is allocated or transferred to level 2.
- Level 3: Impairment losses of financial instruments with objective evidence of impairment, where the amount of the impairment loss is calculated as the difference between the financial instrument's gross carrying amount and the present value of the estimated cash flows. To calculate expected future cash flows, different probability-weighted scenarios are used to estimate all expected payments from the financial instrument (interest and principal) and any payments from realizing collateral in terms of their amount and time at which they are received. The process for non-significant financial assets is the same as for level 2 assets (level 3 parameter-based).

Provisions for allocating levels

Assessing whether an impairment loss is measured on the basis of the expected loss over twelve months (level 1) or over the remaining term of a financial instrument (level 2) is based on three criteria (transfer criteria):

- Quantitative transfer criterion: Initially, the expected probability of default as at the reporting date is calculated based on the initial rating and expected migrations defined for specific segments. A transfer is made if the current risk evaluation is significantly worse than the expected value at this reporting date.
- »Minimum threshold« criterion: A change to the probability of default not exceeding 10 basis points compared to the initial rating is considered minor. In these cases, the impairment loss is always measured using the expected loss over twelve months. This is relevant only to financial instruments with an initial rating of up to three, as a one-notch downgrade for instruments with a rating of four or higher causes the probability of default to deteriorate by more than 10 basis points.
- »Warning signal« criterion: In the event of certain warning signals, the impairment loss of a receivable is always measured using the expected credit loss over the remaining term. These include internal warnings (e.g. under observance or seizure), 30 day delay, intensive support or forbearance measures.

If the »minimum threshold" and »warning signal« criteria are both met, priority is given to the warning signal.

Securities are exempt from the criteria listed above and are allocated to levels using current ratings. If it has an »investment grade«rating, it is allocated to level 1. In all other cases, the securities are allocated to level 2 and the impairment loss measured using the expected loss over the remaining term. The definition of »Investment grade« is based on international standards.

Financial assets for which there are already objective indications of impairment at the time of acquisition constitute another exception. These are known as »Purchased or originated credit-impaired (POCI) financial instruments«. They may be loans/receivables or securities acquired from third parties or as part of the original issue of a new financial instrument. The latter may arise, for example, as part of amending the contract if this amendment is so material that the previous financial instrument is disposed of and a new financial instrument is acquired. In these cases, the impairment loss is always measured using the expected loss over the remaining term of the financial instrument, even if recovery is expected or actually occurs. These instruments are not transferred to another level.

Current ratings, for which the probability of default is over a twelve-month period, are used for the quantitative aspects of the transfer criterion. As demonstrated by analyses as part of developing the transfer criterion, this is appropriate for assessing the default risk over the remaining term.

An financial instrument that was not impaired upon acquisition but for which there is objective evidence of impairment must be allocated to level 3.

The following events are considered objective evidence of impairment:

- material financial difficulties of the debtor
- breach of contract by the debtor, e.g. default in payment
- concessions by the bank due to financial difficulties experienced by the debtor that would not have been granted if not for the financial difficulties
- insolvency or restructuring of the debtor's funds is likely
- financial difficulties experienced by the debtor cause the loss of an active market for the financial instrument
- a financial instrument is acquired or issued at significantly below its nominal value due to loan losses

At LBBW, the definition for accounting purposes is based on the regulatory definition of default. 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
- Impairment.

If the conditions for measuring the impairment loss over the remaining term of a financial instrument (levels 2 and 3) are no longer met, an impairment loss is measured on the basis of the expected loss over twelve months (level 1).

Determining the impairment loss

For financial assets allocated to levels 1 and 2 or measured in level 3 (parameter-based), the expected loss is calculated depending on the probability of default (PD), the loss given default (LGD) and the expected exposure at default (EaD). These parameters are standardized at twelve months for level 1 financial instruments. For calculating the expected loss over the entire term, the parameters are standardized at the remaining term of the financial asset.

Regardless of the remaining term, the expected losses – calculated as the product of the three parameters listed – are discounted by the financial instrument's effective interest rate or an approximation of this at the reporting date. Significant financial assets that are already credit-impaired at the time of recognition (POCI) are exempt from this. In these cases, the effective interest rate is adjusted at the time of acquisition by taking into account the expected losses over the remaining term, meaning that no additional allowances for losses on loans and advances are to be recognized on initial recognition. The resulting, credit-adjusted effective interest rate is used for subsequent measurement.

Description of parameters:

- PD (»Probability of default«)
  Specific rating and risk classification procedures are used for all relevant business activities. These procedures quantify the probability of default for the individual exposures, which is initially standardized at twelve months. Probabilities of default for periods of several years are also calculated on the basis of long-term internal rating histories. Calculations of customer credit ratings take into account historical, current and forward-looking information where this demonstrably improves the forecasting quality. In addition, the regulatory rating for the bank's core areas of business corporate customers and real estate financing in Germany is also adjusted for economic effects on the basis of the rate of change in the ifo (Institut für Wirtschaftsforschung) Business Climate Index and gross domestic product.
- LGD (»Loss given default«)
  The loss given default is determined largely by the likelihood of recovery and the level of collateralization for the underlying asset. The level of collateralization is the ratio of projected realization revenue for the collateral and the expected exposure at default. This is forecast individually for different types of collateral and customer groups. The estimates of the model parameters are based on empirical values and pool data recorded by the Bank itself and in cooperation with savings banks and other Landesbanken, which are assessed to ensure they are representative of LBBW. The LGD is initially standardized at twelve months. Multi-year loss ratios for defaults are also calculated using models for collateral value and EaD forecasts for each potential time the debtor defaults. As for the probability of default, forward-looking information is also taken into consideration.
- EaD (»exposure at default«)
  The expected exposure at default (EaD) is calculated using different models depending on the properties of the underlying financial instrument. The EaD of a fully paid out, non-revolving financial instrument is equal to the mean exposure in the year of default and is calculated taking into account contractual cash flows. For non-revolving financial instruments that have not yet been fully paid out at the measurement date, the expected date of full payment (full disbursement) is determined using models featuring customer and transaction-specific properties as risk factors. Payments are estimated by way of linear interpolation until the date of full disbursement and are therefore included in the EaD estimate. A separate category of models have been developed for revolving commitments. These models forecast the expected use of commitments for any time in the future until the end of the contract in question. If this is not explicitly stated, the notice period is used to determine the term. A behavior-based term that is longer than the notice period is estimated on the basis of past data only for overdraft facilities and credit cards. Model inputs include structural transaction and customer properties, the duration until default and the past drawdown pattern of the credit facility. The models are estimated on internal data using different types of regression models. Sureties that are not fully utilized in the event of default represent a special case. The at risk amount for these transactions is calculated using a credit conversion factor (CCF).

A level 3 impairment loss is determined individually for significant receivables in contrast to level 3 (parameter-based). For this, the bank used a discounted cash-flow method. 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), which are discounted by the original effective interest rate determined at the date of acquisition. Cash flows estimated to determine the need for allowances for losses on loans and advances are to be calculated using various scenarios (going concern excluding or adjusted for debt capital and gone concern) and analyst estimates weighted by probability.

Amortization and depreciation

A financial instrument is to be written down directly in the event of an actual or only partial default or loss. If no surrogate takes the place of the defaulted receivable, it is considered uncollectible. The receivable is derecognized if no recovery is expected. This is the case, for example:

- in insolvency cases where no further payments from the sale of collateral or an insolvency dividend are expected,
- terminated exposures where the outstanding receivables cannot be settled,
- fully or partial relinquishment of debt,
- sale of receivable at a loss and
- private customers who pay small installments on a high outstanding receivable after disposing of the collateral because it is assumed that the customers will not be able to repay the claim fully within the two-year period.

Exposures that are written off but remain subject to enforcement activity are processed centrally. The aim of this is to collect extraordinary income from these exposures.

Recovery and probation period

The length of the recovery and probation period depends on the reason for the default in that specific case. In the case of »restructuring« as the cause of default, this period lasts twelve months. For all other causes of default, recovery is admissible only once sustainable economic recovery is assumed. To this end, a case-by-case assessment is carried out for each recovery.

Reversal of impairment losses

A financial instrument is deemed to be impaired when there is objective evidence of impairment. If there is a reduction in the impairment requirement or if objective evidence of impairment for a receivable ceases to exist, the existing allowance for losses on loans and advances must be reversed through profit or loss. However, the reversal of the impairment loss must not exceed the carrying amount that the receivable would have had if it had not been impaired.

Sensitivity analysis of changes in material assumptions

There were no changes to material assumptions in impairment methods last year.

5.6.2 Quantitative disclosures

Disclosure of non-performing exposures

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 2019 under FINREP.

EUR million	Accumulated specific credit risk adjustments	General credit risk adjustments
Opening balance 30 June 2019	*1,038*	-
Increases due to amounts set aside for estimated loan losses during the period	121	-
Decreases due to amounts reversed for estimated loan losses during the period	-33	-
Decreases due to amounts taken against accumulated credit risk adjustments	-74	-
Transfers between credit risk adjustments	-	-
Impact of exchange rate differences	1	-
Business combinations, including acquisitions and disposals of subsidiaries	-	-
Other adjustments	-	-
Closing balance 31 December 2019	*1,052*	-
Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	9	-
Specific credit risk adjustments directly recorded to the statement of profit or loss	-12	-

Figure 33: 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 2019 in accordance with FINREP.

EUR million	Gross carrying values of defaulted exposures
Opening balance 30 June 2019	*1,041*
Loans and debt securities that have defaulted or been impaired since the last reporting period	413
Returned to non-defaulted status	-57
Amounts written off	-22
Other changes	-277
Closing balance 31 December 2019	*1,097*

Figure 34: 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.

	Gross carrying values					
EUR million	≤ 30 days	> 30 days ≤ 60 days	> 60 days ≤ 90 days	> 90 days ≤ 180 days	> 180 days ≤ 1 year	> 1 year
Loans	418	179	137	33	121	230
Debt securities	-	-	-	-	6	-
Total 31 December 2019	*418*	*179*	*137*	*33*	*127*	*230*
Total 30 June 2019	*240*	*84*	*187*	*39*	*138*	*284*

Figure 35: EU CR1-D – Maturity structure of past-due exposures (Article 442 (g) and (h) CRR)

The following table shows non-performing and forborne exposures according to FINREP, split by debt securities, loans and advances and off-balance-sheet exposures. Unlike in the FinRep tables, accumulated impairments are presented as positive figures both for on-balance-sheet and off-balance-sheet items. This method was selected to ensure the values can be meaningfully compared with the prior period figures.

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			
		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	On non-performing exposures	Of which forborne exposures
Debt securities	26,213	-	-	6	6	6	-	4	-	6	-	-	-
Loans and advances	187,185	297	165	1,136	1,097	1,089	464	353	4	549	222	156	146
Off-balance-sheet exposures	62,692	-	5	210	209	-	7	48	0	97	2	13	4
Total 31 December 2019	*276,090*	*297*	*170*	*1,352*	*1,312*	*1,096*	*471*	*405*	*4*	*653*	*224*	*168*	*150*
Total 30 June 2019	*283,080*	*231*	*308*	*1,245*	*1,188*	*1,017*	*359*	*404*	*7*	*643*	*181*	*212*	*153*

Figure 36: EU CR1-E – Non-performing and forborne exposures (Article 442 (g) and (i) CRR)

Disclosure of non-performing receivables

Banks whose NPL ratio is under 5% are required to disclose only tables 1, 3, 4 and 9 of the guidelines published by the European Banking Authority on 31 October 2018 (EBA/GL/2018/10) from 31 December 2019 onwards. LBBW has published these tables voluntarily since 31 December 2018. By publishing this, the requirements of the ECB Guidelines on non-performing loans dated March 2017 are therefore also considered to have been met.

The following table shows the credit quality of forborne exposures.

EUR million	Gross carrying amount/nominal amount of exposures with forbearance measures				Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions		Collateral and financial guarantees received on forborne exposures	
		Non-performing forborne						
	Performing forborne		Of which defaulted	Of which impaired	On performing forborne exposures	On non-performing forborne exposures		Of which, collaterals and financial guarantees received on non-performing exposures with forbearance measures
Loans and advances	*165*	*464*	*456*	*444*	*-4*	*-222*	*-146*	*-112*
Central banks	-	-	-	-	-	-	-	-
Central governments	-	-	-	-	-	-	-	-
Banks	-	-	-	-	-	-	-	-
Other financial corporations	2	36	36	27	0	-17	-4	-3
Non-financial corporations	153	399	393	394	-4	-199	-117	-92
Households	9	29	27	23	0	-6	-24	-17
Debt instruments	-	-	-	-	-	-	-	-
Loan commitments granted	*5*	*7*	*7*	*7*	*0*	*-2*	*-4*	*-3*
Total 31 December 2019	*170*	*471*	*463*	*451*	*-4*	*-224*	*-150*	*-116*
Total 30 June 2019	*308*	*359*	*348*	*335*	*-7*	*-181*	*-153*	*-79*

Figure 37: Credit quality of forborne exposures (template 1 of EBA-GL)

The following figure shows the credit quality of non-performing and performing exposures, broken down by days past due.

EUR m	Carrying amount/nominal amount											
	Performing exposures			Non-performing exposures								
		Not past due or past due < 30 days	Past due >30 days < 90 days		Unlikely to pay that are not past due or are past due < 90 days	Past due > 90 days ≤ 180 days	Past due > 180 days ≤ 1 year	Past due > 1 year ≤ 2 years	Past due > 2 years ≤ 5 years	Past due > 5 years ≤ 7 years	Past due > 7 years	Of which defaulted
Loans and advances	*186,050*	*185,753*	*297*	*1,136*	*751*	*33*	*121*	*39*	*67*	*37*	*88*	*1,097*
Central banks	19,156	19,156	0	-	-	-	-	-	-	-	-	-
Central governments	13,436	13,435	1	0	-	-	0	-	0	0	-	0
Banks	54,688	54,688	1	19	4	6	8	-	0	1	-	19
Other financial corporations	19,726	19,598	128	42	30	0	0	-	2	0	10	39
Non-financial corporations	66,071	65,912	159	948	667	13	107	31	47	29	53	922
of which SMEs	8,808	8,796	12	198	121	8	13	18	24	6	8	183
Households	12,972	12,964	8	126	50	14	6	8	18	6	24	117
Debt instruments	*26,207*	*26,207*	-	*6*	-	-	*6*	-	-	-	-	*6*
Central banks	491	491	-	-	-	-	-	-	-	-	-	-
Central governments	3,500	3,500	-	-	-	-	-	-	-	-	-	-
Banks	19,836	19,836	-	-	-	-	-	-	-	-	-	-
Other financial corporations	2,005	2,005	-	-	-	-	-	-	-	-	-	-
Non-financial corporations	375	375	-	6	-	-	6	-	-	-	-	6
Off-balance-sheet exposures	*62,482*			*210*								*209*
Central banks	9			-								-
Central governments	1,232			-								-
Banks	8,597			-								-
Other financial corporations	7,123			6								6
Non-financial corporations	41,996			204								203
Households	3,525			0								0
Total 31 December 2019	*274,739*	*211,959*	*297*	*1,352*	*751*	*33*	*127*	*39*	*67*	*37*	*88*	*1,312*
Total 30 June 2019	*281,835*	*220,668*	*231*	*1,245*	*635*	*39*	*138*	*48*	*79*	*48*	*109*	*1,188*

Figure 38: Credit quality of performing and non-performing exposures by past due days (template 3 of EBA-GL)

The following figure shows performing and performing exposures. These are shown alongside the corresponding impairment, provisions and adjustments, divided by portfolio and exposure class in accordance with FinRep.

EUR million	Carrying amount/nominal amount – Performing exposures	Of which level 1	Of which level 2	Non-performing exposures	Of which level 2	Of which level 3	Accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions – Performing exposures – accumulated impairment and provisions	Of which level 1	Of which level 2	Non-performing exposures – accumulated impairment, accumulated negative changes in fair value due to credit risk and provisions	Of which level 2	Of which level 3	Partial write-off	Collaterals and financial guarantees received – On performing exposures	On non-performing exposures
Loans and advances	*186,050*	*171,243*	*13,001*	*1,136*	*5*	*1,113*	*-353*	*-60*	*-293*	*-549*	*0*	*-543*	*-270*	*-38,844*	*-293*
Central banks	19,156	19,156	0	-	-	-	0	0	0	-	-	-	-	-	-
Central governments	13,436	11,764	18	0	-	0	-1	0	0	0	-	0	-	-461	-
Banks	54,688	54,301	335	19	-	19	-3	-2	-1	-15	-	-15	-	-605	-1
Other financial corporations	19,726	18,942	764	42	-	33	-18	-3	-15	-22	-	-21	-10	-4,015	-3
Non-financial corporations	66,071	56,106	9,886	948	3	937	-292	-48	-245	-466	0	-460	-238	-25,731	-236
of which SMEs	8,808	7,906	902	198	-	193	-29	-10	-19	-77	-	-77	-44	-4,149	-78
Households	12,972	10,975	1,996	126	3	124	-39	-7	-31	-47	0	-46	-22	-8,032	-52
Debt instruments	*26,207*	*26,023*	*107*	*6*	-	*6*	*-4*	*-3*	*-1*	*-6*	-	*-6*	-	-	-
Central banks	491	491	-	-	-	-	0	0	-	-	-	-	-	-	-
Central governments	3,500	3,378	97	-	-	-	-2	-1	-1	-	-	-	-	-	-
Banks	19,836	19,816	-	-	-	-	-2	-2	-	-	-	-	-	-	-
Other financial corporations	2,005	1,974	-	-	-	-	0	0	-	-	-	-	-	-	-
Non-financial corporations	375	365	10	6	-	6	0	0	0	-6	-	-6	-	-	-
Off-balance-sheet exposures	*62,482*	*58,985*	*3,498*	*210*	-	*210*	*-48*	*-18*	*-30*	*-97*	-	*-97*		*-3,576*	*-28*
Central banks	9	9	-	-	-	-	-	-	-	-	-	-		-	-
Central governments	1,232	1,227	5	-	-	-	0	0	0	-	-	-		-59	-
Banks	8,597	8,594	3	-	-	-	0	0	0	-	-	-		-86	-
Other financial corporations	7,123	6,847	277	6	-	6	-1	0	0	-4	-	-4		-275	-
Non-financial corporations	41,996	39,077	2,920	204	-	204	-42	-14	-28	-94	-	-94		-2,949	-28
Households	3,525	3,232	293	0	-	0	-5	-3	-3	0	-	0		-207	0
Total 31 December 2019	*274,739*	*256,251*	*16,606*	*1,352*	*5*	*1,329*	*-405*	*-81*	*-325*	*-653*	*0*	*-647*	*-270*	*-42,421*	*-321*
Total 30 June 2019	*281,835*	*263,367*	*16,370*	*1,245*	*45*	*1,183*	*-404*	*-81*	*-323*	*-643*	*0*	*-633*	*-251*	*-34,098*	*-212*

Figure 39: Performing and non-performing exposures and related provisions (template 4 of EBA-GL)

The following figure shows collateral resulting from bail-out purchases that are in LBBW's possession.

EUR million	Collateral obtained by taking possession	
	Value at initial recognition	Accumulated negative changes
Property and equipment	-	-
Other assets	-	-
Residential real estate	-	-
Commercial real estate	-	-
Movables (cars, boats, etc.)	-	-
Equity and debt instruments	-	-
Other	-	-
Total	*0*	*0*

Figure 40: Collateral obtained by taking possession (template 9 of EBA-GL)

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 2019, 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, Counterparty credit risk)

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 real estate property is initially valued and real estate valuations are reviewed and monitored 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. The collateral is measured using a computer-aided program (LORA) 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 German Banking Industry Committee (Deutsche Kreditwirtschaft (DK)) to monitor the domestic real estate market in order to determine which real estate properties require a special review.
- Review of real estate valuations due to anomalies from monitoring real estate markets: 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).
- The market and mortgage lending values are reviewed every three years if the limit set out in Article 208 (3b) CRR is exceeded.

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 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.

The fall in secured exposures in the exposure class »Banks« in the second half of the year is due predominantly to changes in holdings, maturities of receivables from banks and the decrease in the volume of securities financing transactions.

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	39,413	6,696	2,701	9	-
Institutions	22,474	31,746	26,014	354	-
Corporates	*100,661*	*32,650*	*21,264*	*5,803*	-
of which specialized lending exposures	13,621	6,456	4,414	688	-
of which SMEs	6,416	4,111	2,983	490	-
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	1,583	-	-	-	-
Other non credit obligation assets	1,900	-	-	-	-
Total amount under IRB approach – 31 December 2019	*166,030*	*71,093*	*49,979*	*6,165*	-
of which credits [1]	96,042	52,244	41,905	4,644	-
of which debt securities [1]	29,043	8,459	7,715	158	-
of which off-balance-sheet exposures [1]	648	254	31	93	-
Total amount under IRB approach – 30 June 2019	*178,445*	*76,658*	*62,469*	*6,043*	
Central governments or central banks	6				-
Regional governments or local authorities	124	4		4	-
Public-sector entities	60	512	4	498	-
Multilateral development banks					-
International organizations					-
Institutions	31,189	2,686	1,095	2	-
Corporates	4,272	4,219	1,119	2,365	-
of which SMEs	1,394	386	119	232	-
Retail business	8,636	973	112	282	-
of which SMEs	2,071	46	19	16	-
Secured by mortgages on immovable property		4,282	4,282		-
of which SMEs		129	129		-
Exposures in default	78	21	13	8	-
Items associated with particularly high risk	32				-
Covered bonds	15				-
Institutions and corporates with a short-term credit assessment					-
Undertakings for collective investment	18				-
Equity exposures					-
Other items	77				-
Total amount under the standardized approach – 31 December 2019	*44,508*	*12,698*	*6,625*	*3,159*	-
of which credits [1]	40,769	8,874	6,336	1,799	-
of which debt securities [1]	159	8	8		-
of which off-balance-sheet exposures [1]	78	21	13	8	-
Total amount under the standardized approach – 30 June 2019	*42,326*	*11,227*	*7,349*	*3,049*	
Total 31 December 2019	*210,538*	*83,791*	*56,604*	*9,325*	-
of which credits [1]	136,811	61,118	48,241	6,443	-
of which debt securities [1]	29,202	8,466	7,722	158	-
of which off-balance-sheet exposures [1]	726	275	44	101	-
Total 30 June 2019	*220,771*	*87,885*	*69,818*	*9,092*	-

1 figures in accordance with FINREP

Figure 41: EU CR3 – Credit risk mitigation techniques – overview (Article 453 (f) and (g) CRR)

6.4 Credit risk mitigation techniques under the standardized 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.

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**	**RWA**	**RWA density in %**
Central governments or central banks	6	-	219	0	-	-
Regional governments or local authorities	37	92	1,096	8	0	0.0
Public-sector entities	550	22	50	0	10	19.9
Multilateral development banks	-	-	-	-	-	-
International organizations	-	-	-	-	-	-
Institutions	31,655	2,221	31,583	1,094	138	0.4
Corporates	7,186	1,305	5,835	246	4,753	78.2
Retail business	6,305	3,304	5,924	271	4,326	69.8
Secured by mortgages on immovable property	4,270	12	4,270	6	1,508	35.3
Exposures in default	94	5	85	3	118	133.7
Exposures associated with particularly high risk	32	-	32	-	48	150.0
Covered bonds	15	-	15	-	-	0.0
Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-
Undertakings for collective investment	18	-	18	-	13	71.9
Equity exposures	-	-	-	-	-	-
Other items	77		77	-	73	94.1
Total 31 December 2019	*50,245*	*6,960*	*49,204*	*1,627*	*10,986*	*21.6*
Total 30 June 2019	*46,553*	*7,000*	*44,524*	*1,560*	*10,944*	*23.8*

Figure 42: EU CR4 – Standardized 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.

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 2019, both columns are identical.

EUR million

	Pre-credit derivatives RWAs		**Actual RWAs**	
Exposure class	**31/12/2019**	**30/06/2019**	**31/12/2019**	**30/06/2019**
Exposures under FIRB	*49,872*	*52,055*	*49,872*	*52,055*
Central governments and central banks	3,280	3,600	3,280	3,600
Institutions	4,950	5,508	4,950	5,508
Corporates – SMEs	3,144	3,244	3,144	3,244
Corporates – specialized lending	9,449	10,334	9,449	10,334
Corporates – other	29,049	29,369	29,049	29,369
Exposures under AIRB	-	-	-	-
Central governments and central banks	-	-	-	-
Institutions	-	-	-	-
Corporates – SMEs	-	-	-	-
Corporates – specialized lending	-	-	-	-
Corporates – other	-	-	-	-
Retail – secured by real estate SMEs	-	-	-	-
Retail – not secured by real estate SMEs	-	-	-	-
Retail – qualifying revolving	-	-	-	-
Retail – other SMEs	-	-	-	-
Retail – other non-SMEs	-	-	-	-
Equity exposures under IRB approach	3,410	3,442	3,410	3,442
Other assets excl. loan commitments	1,617	1,640	1,617	1,640
Total	***54,899***	***57,136***	***54,899***	***57,136***

Figure 43: EU CR7 – IRB approach – Effect on the RWAs of credit derivatives used as credit mitigation techniques (Article 453 (g) 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 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 measurement	▪ Calculation according to the standardized method (Article 384 CRR)

Figure 44: Overview of the rules on counterparty credit risk

Counterparty credit risk

Counterparty credit risk (CCR) 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) no. 50c 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«).

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. An effective reduction of WWRs can 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 and accepting cash collateral which provide for low thresholds for additional margins and a daily valuation of customer portfolios.

In brokerage business with Sparkassen, derivatives concluded bilaterally are guaranteed by the Sparkassen.

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 2019, the additional funding obligation amounted to around EUR 70m in the event of a downgrade of LBBW by at least three 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 by the value of the counterparty 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	Replace-ment cost / current market value	Potential future credit exposure	EEPE	Multiplier	EAD post CRM	RWA
Mark-to-market		13,127	9,435			15,813	2,442
Original exposure	-					-	-
Standardized approach		-			-	-	-
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 31 December 2019							*2,442*
Total 30 June 2019							*2,661*

Figure 45: 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	RWA
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	2,662	1,175
Based on the original exposure method	-	-
Total subject to the CVA capital charge – 31 December 2019	*2,662*	*1,175*
Total subject to the CVA capital charge – 30 June 2019	*2,747*	*1,211*

Figure 46: 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 risk weight. The table does not include 2%, 4%, 10%, 50% or 150% risk weights, since LBBW has no exposures in any of these risk weight categories.

EUR million	Risk weight in %							
Exposure class	**0**	**20**	**70**	**75**	**100**	**Other**	**Total**	**Of which unrated**
Central governments or central banks	-	-	-	-	-	-	-	-
Regional governments or local authorities	15	-	-	-	-	-	15	15
Public-sector entities	-	10	-	-	-	-	10	-
Multilateral development banks	-	-	-	-	-	-	-	-
International organizations	-	-	-	-	-	-	-	
Institutions	2,008	1	-	-	-	-	2,009	2,008
Corporates	-	0	0		96	0	96	96
Retail business	-	-	-	7	-	-	7	7
Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-
Other items	-	-	-	-	-	-	-	-
Total 31 December 2019	*2,023*	*11*	*0*	*7*	*96*	*0*	*2,137*	*2,126*
Total 30 June 2019	*2,371*	*28*	-	*7*	*92*	-	*2,498*	*1,651*

Figure 47: 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 scale	EAD post CRM	Average PD in %	Number of obligors	Average LGD in %	Average maturity	RWA	RWA density in %
Central governments or central banks							
0.00 to < 0.15	7,921	0.00	139	24.12	900	4	0.05
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 31 December 2019	*7,921*	*0.00*	*139*	*24.12*	*900*	*4*	*0.05*
Sub-total 30 June 2019	*8,020*	*0.00*	*147*	*26.20*	*900*	*7*	*0.08*
Institutions							
0.00 to < 0.15	3,495	0.06	149	35.97	900	807	23.09
0.15 to < 0.25	209	0.17	18	40.99	900	107	51.21
0.25 to < 0.50	86	0.26	14	19.54	900	26	29.86
0.50 to < 0.75	12	0.59	2	12.81	900	3	22.61
0.75 to < 2.50	20	1.43	6	24.58	900	13	64.06
2.50 to < 10.00	-	-	-	-	-	-	-
10.00 to < 100.00	6	10.00	4	31.18	900	8	141.81
100.00 (Default)	-	-	-	-	-	-	-
Sub-total 31 December 2019	*3,827*	*0.10*	*193*	*35.73*	*900*	*963*	*25.16*
Sub-total 30 June 2019	*3,890*	*0.14*	*203*	*36.72*	*900*	*1,107*	*28.47*
Corporates – SMEs							
0.00 to < 0.15	26	0.06	81	45.00	900	5	19.93
0.15 to < 0.25	15	0.17	33	45.00	900	5	35.14
0.25 to < 0.50	30	0.37	80	44.99	900	14	47.20
0.50 to < 0.75	7	0.59	26	45.00	900	5	67.33
0.75 to < 2.50	13	1.20	66	42.76	900	11	83.77
2.50 to < 10.00	1	4.33	19	45.00	900	1	119.96
10.00 to < 100.00	1	15.26	4	45.00	900	1	179.32
100.00 (Default)	0	100.00	10	45.00	900	-	-
Sub-total 31 December 2019	*93*	*0.96*	*319*	*44.69*	*900*	*43*	*46.16*
Sub-total 30 June 2019	*112*	*1.02*	*349*	*44.72*	*900*	*57*	*51.53*
Corporates – specialized lending							
0.00 to < 0.15	166	0.07	77	44.99	900	40	24.27
0.15 to < 0.25	41	0.17	21	45.00	900	18	42.54
0.25 to < 0.50	87	0.27	42	45.00	900	47	54.53
0.50 to < 0.75	17	0.59	10	45.00	900	13	79.40
0.75 to < 2.50	66	1.14	18	45.00	900	67	100.67
2.50 to < 10.00	12	3.53	4	45.00	900	17	141.87
10.00 to < 100.00	12	18.65	5	45.00	900	30	247.72
100.00 (Default)	0	100.00	1	45.00	900	-	-
Sub-total 31 December 2019	*401*	*1.00*	*178*	*45.00*	*900*	*232*	*57.92*
Sub-total 30 June 2019	*440*	*1.25*	*180*	*45.00*	*900*	*274*	*62.17*
Corporates – other							
0.00 to < 0.15	1,434	0.09	441	39.13	900	376	26.22
0.15 to < 0.25	479	0.17	209	43.20	900	197	41.26
0.25 to < 0.50	488	0.30	329	44.83	900	280	57.51
0.50 to < 0.75	126	0.59	85	45.00	900	100	79.40
0.75 to < 2.50	52	1.21	130	45.00	900	54	102.75
2.50 to < 10.00	8	4.28	37	45.00	900	12	150.19
10.00 to < 100.00	21	19.92	13	5.39	900	6	28.10
100.00 (Default)	8	100.00	10	45.00	900	-	-
Sub-total 31 December 2019	*2,616*	*0.65*	*1,254*	*41.10*	*900*	*1,026*	*39.23*
Sub-total 30 June 2019	*2,482*	*0.44*	*1,314*	*42.49*	*900*	*1,040*	*41.91*
Equity exposures IRB approach							
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 31 December 2019	-	-	-	-	-	-	-
Sub-total 30 June 2019	-	-	-	-	-	-	-
Total 31 December 2019	*14,858*	*0.17*	*2,083*	*30.79*	*900*	*2,269*	*15.27*
Total 30 June 2019	*14,943*	*0.15*	*2,193*	*32.25*	*900*	*2,485*	*16.63*

Figure 48: 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	51,009	37,882	13,127	6,543	6,584
Securities financing transactions	-	-	-	-	-
Cross-product netting	-	-	-	-	-
Total 31 December 2019	*51,009*	*37,882*	*13,127*	*6,543*	*6,584*
Total 30 June 2019	*55,956*	*42,260*	*13,696*	*5,878*	*7,817*

Figure 49: 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	-	7,234	1,983	6,910	-	-
Securities financing transactions	-	-	-	-	-	-
Cross-product netting	-	-	-	-	-	-
Total 31 December 2019	-	*7,234*	*1,983*	*6,910*	-	-
Total 30 June 2019	-	*6,270*	*2,343*	*7,141*	-	-

Figure 50: EU CCR5-B – Composition of collateral for exposures to counterparty credit

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 2019.

EUR million	Credit derivative hedges		Other credit derivatives	
	Protection bought	Protection sold	31/12/2019	30/06/2019
Notionals				
Single-name credit default swaps	-	-	6,063	5,965
Index credit default swaps	-	-	2,382	2,245
Total return swaps	-	-	1,294	1,137
Credit options	-	-	-	-
Other credit derivatives	-	-	-	-
Total notionals	-	-	*9,739*	*9,348*
Fair values	-	-	*-86*	*-42*
Positive fair value (asset)	-	-	*122*	*119*
Negative fair value (liability)	-	-	*-208*	*-161*

Figure 51: 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 2019, 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. The exposure from credit-linked notes is not required in the table. Fair values are shown separately as positive and negative values. There is no distinction between types of credit derivative.

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		RWA	
	31/12/2019	30/06/2019	31/12/2019	30/06/2019
Exposures to qualifying CCPs (total)			*192*	*223*
Exposures for trades at qualifying CCPs (excl. initial margin and default fund contributions); of which	3,752	3,746	75	75
i) OTC derivatives	2,130	2,025	43	40
ii) exchange-traded derivatives	1,622	1,721	32	34
iii) securities financing transactions	-	-	-	-
iv) netting sets where cross-product netting has been approved	-	-	-	-
Segregated initial margin	1,983	2,343		
Non-segregated initial margin	61	284	1	6
Prefunded default fund contributions	1,175	150	115	142
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	-		-	-
Non-prefunded default fund contributions	-		-	-

Figure 52: 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), including interest rate risks from pension obligations.

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 stressed-value-at-risk, 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 53: 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	RWA		Capital requirements	
	31/12/2019	30/06/2019	31/12/2019	30/06/2019
Outright products				
Interest rate risk (general and specific)	1,230	1,190	98	95
Equity risk (general and specific)	164	236	13	19
Foreign exchange risk	594	730	48	58
Commodity risk	74	102	6	8
Options				
Simplified approach	-	-	-	-
Delta-plus method	70	11	6	1
Scenario approach	0	0	0	0
Securitization (specific risk)	-	-	-	-
Total	*2,133*	*2,268*	*171*	*181*

Figure 54: 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 directly to the member of the Board of Managing Directors with responsibility for risk management, compliance and auditing (CRO).

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 weekly 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. A stressed value-at-risk 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 LBBW (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 99% 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's CRR portfolio. 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 book transactions that are sensitive to creditworthiness. Apart from securities and debt securities, these include money-market transactions in the trading book 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 on a risk basis. 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 own funds requirements are calculated based on the CRR portfolio, which contains all the trading book positions of LBBW (Bank) excluding investment funds that are not presented in the overview.

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 and Validation organizational unit within Group Risk Control, which is independent of model development in organizational terms. 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 binomial test [1], but is also based on the entire distribution forecast. According to regulatory requirements, it is based on changes in portfolio value excluding commission, fees and credit, debit and additional valuation adjustments (known as Dirty P/L) and on changes in portfolio value that also exclude new business and intraday trades and net interest income (known as Clean P/L).

If the backtesting or validation analyses indicate material model risks, these are made transparent to the model developers, model users and recipients of the market risk reports so that the necessary model optimization measures can be initiated. Agreed changes 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 five outliers for the Clean P/L as at the reporting date. The first breach was on 7 January 2019 and amounted to EUR 0.799m. This was caused by a significant widening of credit spreads due to a high number of new issues provided at attractive conditions. Another outlier was recorded on 27 March 2019 following a strong market response to comments made by ECB President Mario Draghi. The breach amounted to EUR 0.047 million. On 14 August, there was a breach of EUR 1.549m. This was the result of changes in yield and credit-spread curves due to announcements on the political situation in Italy, economic worries and news about Brexit. Another outlier was recorded on 15 August, with a breach of EUR 2.750m. This reflected a decline in interest rates in connection with higher volatility following comments from the US Federal Reserve indicating an interest rate cut. On 28 August 2019, news of the political environment in Italy and about Brexit led to declining interest rates and rising credit spreads, triggering another outlier of EUR 0.437m. On the basis of the Dirty P/L two outliers were recorded for the CRR portfolio in the last 250 trading days. The first outlier occurred on 3 January 2019 with a breach of EUR 0.514m, and was caused by the decline in the USD yield curve. This change reflected weak economic data. The second outlier was on 17 December 2019. In this case, the breach amounted to EUR 49.235m. It can be attributed to a development in methodology for a valuation adjustment of unsecured derivatives.

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

Clean backtesting CRR portfolio for the period 27 Dec. 2018 – 30 Dec. 2019 in EUR m.

VaR parameters: 99% confidence level, 1-day holding period

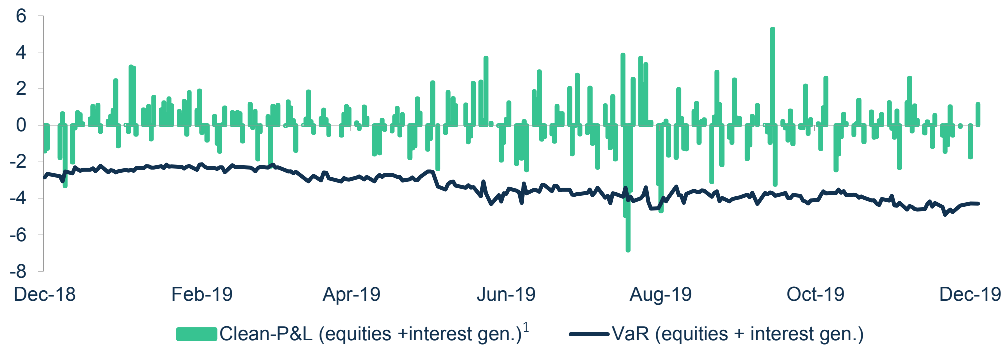

Figure 55: Value at risk of the CRR portfolio under the Internal Model Method and hypothetical buy-and-hold losses (Article 455 (g) CRR)

[1] Switch to P&L shares generally in December.

Dirty backtesting CRR portfolio for the period 27 Dec. 2018 – 30 Dec. 2019 in EUR m.

VaR parameters: 99% confidence level, 1-day holding period

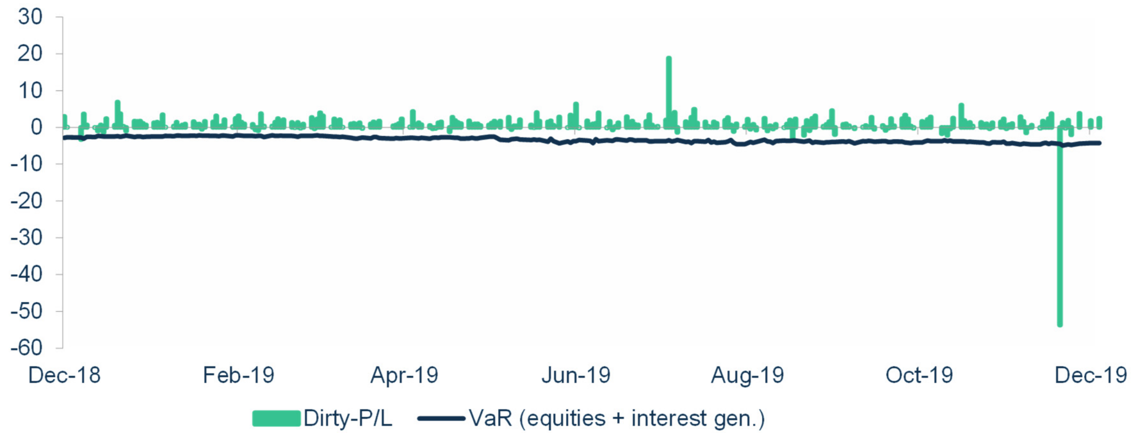

Figure 56: Value at risk of the CRR portfolio under the Internal Model Method and actual portfolio changes excluding commissions and fees (Article 455 (g) CRR).

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. 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 simulates the 2008/2009 financial crisis is the scenario with the greatest impact on LBBW's trading book. Under this scenario, the credit spreads of financials and states widen, credit spreads of companies decline and EUR swap rates decrease. The scenario with the second largest impact on LBBW's trading book is that featuring a sovereign crisis that simulates market fluctuations from mid-2011 to the end of 2012. Here, credit spreads of peripheral countries' sovereign bonds rise, with credit spreads for German and US sovereign bonds with shorter maturities trending downwards and those with longer maturities upwards. Spreads of financials and corporates also increase. EUR and USD swap rates decline.

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 LBBW's 2019 annual report, p. 219 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	RWA		Capital requirements	
	31/12/2019	30/06/2019	31/12/2019	30/06/2019
VaR (higher of values a) and b))	**617**	**404**	**49**	**32**
a) Previous day's VaR (Article 365 (1) CRR (VaRt-1))	169	149	14	12
b) Average of the VaR (Article 365(1) CRR) during the preceding 60 business days (VaRavg) x multiplication factor (mc) in accordance with Article 366 CRR	617	404	49	32
SVaR (higher of values a) and b))	**2,532**	**1,851**	**203**	**148**
a) Latest sVaR (Article 365 (2) CRR (sVaRt-1))	753	755	60	60
b) Average of the sVaR (Article 365(2) CRR) during the preceding 60 business days	2,532	1,851	203	148
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	*3,149*	*2,255*	*252*	*180*

Figure 57: EU MR2-A – Market risk under the Internal Model Method (Article 455 (e) CRR)

The risk increase is due to item changes, low interest rates and higher volatility.

The MR2-A table shows the figures reported at the end of the year. In accordance with the requirements of the EBA, these are determined by taking the figures of the penultimate working day. The figures shown in table MR2-B are calculated based on the last working day.

The following table shows the holdings of VaR and of the stressed VaR as at 31 December 2019.

EUR million	VaR	sVaR	IRC	Internal model for correlation trading activities	Other	Total RWAs	Total own fund requirements
RWAs 30 September 2019	*587*	*2,492*	-	-	-	*3,079*	*246*
Regulatory adjustments	437	1,874	-	-	-	2,311	185
RWA at the previous quarter-end (end of the day)	150	618	-	-	-	768	61
Movement in risk levels	42	113	-	-	-	155	12
Model updates/changes			-	-	-	-	-
Methodology and policy			-	-	-	-	-
Acquisitions and disposals			-	-	-	-	-
Foreign exchange movements			-	-	-	-	-
Other	-22		-	-	-	-22	-2
RWAs at the end of the reporting period (end of the day)	170	731	-	-	-	901	72
Regulatory adjustments	449	1,808	-	-	-	2,257	181
RWAs 31 December 2019	*619*	*2,539*				*3,158*	*253*

Figure 58: 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.

EUR million	31/12/2019	30/06/2019
VaR (10 days 99%)		
Maximum value	16	14
Average value	13	11
Minimum value	10	9
Value at the end of the reporting period	14	12
sVaR (10 day 99%)		
Maximum value	68	69
Average value	53	62
Minimum value	42	57
Value at the end of the reporting period	58	66
IRC (99.9%)		
Maximum value	-	-
Average value	-	-
Minimum value	-	-
Value at the end of the reporting period	-	-
Internal model for correlation trading activities (99.9%)		
Maximum value	-	-
Average value	-	-
Minimum value	-	-
Value at the end of the reporting period	-	-

Figure 59: 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. Treasury accepts further strategic positions in a framework established by the Board of Managing Directors as a whole on the basis of LBBW's business strategy. 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. These also include definitions for handling loans that mature early. 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 99% and holding period of one trading day). The VaR expresses the potential loss which with 99% 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. 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 in accordance with EBA/GL/2018/02. In the »Parallel fall in interest rates« scenario, each currency has a lower interest rate limit depending on the maturity, starting at -1% for items that mature immediately. This lower limits increases by 5 basis points each year, until 0% is reached for maturities from 20 years. Thus, the effective fall in interest rates assumed in the scenario is determined by current interest rates and the lower interest rate limit depending on the maturity.

Given the still very low interest rates in EUR and the lower interest rate limit depending on the maturity, there is still a difference between the absolute stress results for the increasing interest rate and declining interest rate scenario. The improvement to the stress values in comparison to the previous year is a result of changing the process for setting the lower interest rate limit after the EBA Guideline 2018/02 took effect.

The following table shows the changes in net present value, broken down into the main currencies, of a sudden parallel shift in the yield curve by +/- 200 basis points.

EUR million	Changes in present value due to interest rate shock	
Currency	**Parallel upward shock**	**Parallel downward shock**
CHF	-9	5
EUR	-687	265
GBP	-47	155
JPY	6	-3
USD	-7	7
Other	-1	12
Total 31 December 2019	*-747*	*342*
Total 31 December 2018[1]	*-809*	*-405*

1 Calculated in accordance with BaFin Circular 11/2011.

Figure 60: Interest rate risks in the banking book (Article 448 (b) CRR)

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

Investments were made in two new securitization transactions in the 2019 reporting year. These are two tranches (totaling EUR 59 m) of an established securitization program, as part of which receivables from lease and hire-purchase agreements with German corporate customers are securitized.

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

External ratings are generally available for investor positions, which lead to the application of the ratings-based approach (SEC-ERBA). 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. One investor exposure has no internal rating. This exposure is treated in accordance with the SEC-SA approach.

Sponsor positions

Aims
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 2019. 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. The objective of this is to achieve sustainable success for customers and the bank.

LBBW supports its corporate customers within the context of asset securitization by way of the WEINBERG ABCP program. It concentrates on the securitization of first-class, SME and real-economy receivable portfolios, with a focus on trade and lease receivables. In hidden transactions, participating companies benefit from capital market funding, off-balance solutions, funding diversification and, in some cases, improved processes in accounts receivable management.

Structures
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 daily 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 a few exceptions, all securitization positions for which LBBW reports risk-weighted securitization values as a sponsor are rated using the Internal Assessment Approach (IAA). The existing approval for this process has been extended to cover a wider range of uses. LBBW expects the decision on this to be made shortly. The process will be implemented in 2020 and will thus present all relevant transactions. At present, these still have a risk weight of 100% on the basis of an exemption under Article 259 CRR. All other transactions use the risk weighting tables under Article 263 CRR (SEC-ERB approach) or in accordance with the transition rules in Article 2 of the Delegated Regulation (EU) 2017/2401.

As part of the EU Securitisation Regulation, which came into effect on 1 January 2019, LBBW – as sponsor of the Weinberg ABCP program – assumed the function of the reporting unit for all transactions in its ABCP program. The relevant transparency requirements under Article 7 of the Securitisation Regulation were met. In addition, all transactions were evaluated with regard to their lending criteria in connection with Article 5 (2) and Article 9 of the Securitisation Regulation. The provision of supporting liquidity lines meets the risk retention requirements in accordance with Article 6 of the Securitisation Regulation.

In 2019, LBBW also declared that a total of three transactions in its Weinberg program met STS requirements. For two transactions, correspondingly lower capital weightings under Article 243 (1) in conjunction with Article 264 CRR are applied to the liquidity lines provided. The transition rules in accordance with Article 2 of the Delegated Regulation 2017/2401 were applied for the other liquidity lines, where these were already in place before 1 January 2019.

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 2019. The commercial papers are rated by Moody's Investors Service and Fitch Ratings Ltd. The Weinberg ABCP program does not meet the STS requirements under Article 23 (2) of the Securitisation Regulation.

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 2019 reporting year.

Resecuritizations

LBBW did not hold any resecuritization positions during the 2019 reporting year.

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 SEC-ERBA / SEC-SA 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 SEC-ERBA 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 SEC-SA 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. In 2019, approval was granted to extend the IAA method to include interest-bearing receivables, subject to certain conditions.

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	Transaction 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 61: 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 validation results are accepted by an area head committee.

If LBBW purchases commercial papers (CP) under its own ABCP program, this is classified as an overlapping position under Article 248 (2) of the Delegated Regulation EU 2017/2401. This means that the risk exposures are backed by the risk weightings of the securitization liquidity facilities provided by LBBW under Article 248 (3) of the Delegated Regulation EU 2017/2401.

10.2 Securitization positions in the trading book

LBBW did not trade in any trading-book securitization positions in 2019. 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 2019, 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 under CRR 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 2019:

- Weinberg Capital DAC, Dublin
- Weinberg Funding Ltd., Jersey
- Another special-purpose vehicle (»PALS Funding 2 LLC, Delaware«) was dissolved in 2019 and is thus no longer included in the IFRS consolidated financial statements.

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 9, the products were allocated to »measured at amortized cost« or »mandatorily measured at fair value through profit or loss« at the time of acquisition in line with their documented business model and the cash flow criterion and were measured as shown below:

Financial assets measured at amortized cost:

This balance sheet item includes financial assets belonging to portfolios with the business model »Hold« that meet the requirement of a simple loan agreement. The item comprises exclusively non-derivative debt instruments such as accounts receivable and securities. This financial asset is measured at amortized cost.

Interest income (positive and negative) and fees similar to interest from these financial assets are recognized in the statement of profit or loss under »Net interest income and current income from equity instruments«. Expenses and income from allowances for losses on loans and advances, as well as gains and losses from selling these financial assets, can be found in the statement of profit or loss under the item »Net income from financial assets measured at amortized cost«.

Financial assets mandatorily measured at fair value through profit or loss:

Financial assets that neither meet the requirements of a simple loan agreement nor belong to a portfolio with the »Sell« business model are recognized in this balance sheet item. A subsequent remeasurement at fair value[1] through profit or loss takes into account all fluctuations in fair value directly in the statement of profit or loss.

Interest income (positive and negative) from these financial assets and distributions from equity instruments are recognized in the statement of profit or loss under »Net interest income and current income from equity instruments«. Changes to fair value and gains and losses from selling these financial instruments can be found in the statement of profit or loss under the item »Net gains/losses from financial instruments measured at fair value through profit or loss«.

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 under »measured at amortized cost« (IFRS) upon utilization.

Upon utilization, swaps are recognized as derivatives under IFRS and allocated to the category »Financial assets mandatorily measured at fair value through profit or loss«.

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	-	-	-	3,275	-	3,275
from residential construction loans	-	-	-	-	-	-
from total or partial commercial real estate loans	-	-	-	-	-	-
from corporates (including SMEs)	-	-	-	1,734	-	1,734
from own and purchased lease receivables	-	-	-	1,395	-	1,395
from automotive financing (excl. leasing)	-	-	-	146	-	146
from other retail business	-	-	-	-	-	-
from CDOs and ABS	-	-	-	-	-	-
Derivatives	-	-	-	6	-	6
Credit enhancements	-	-	-	-	-	-
Resecuritizations	-	-	-	-	-	-
Total 31 December 2019	-	-	-	*3,281*	-	*3,281*
Total 31 December 2018	-	-	-	*3,491*	-	*3,491*

Figure 62: 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 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.

Based on the securitization regulations applicable since 1 January 2019, the new securitizations entered into since this reporting date are divided into SEC-SA (standardized approach), SEC-ERBA (external ratings-based approach) and SEC-IAA (internal assessment approach). The previous arrangement, which divides securitizations into CRSA and IRB, still applies to securitizations concluded up to 31 December 2018.

1 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.e. especially for securitizations).

EUR million	Banking book – exposure values					
Securitization positions	CRSA	IRB approach	SEC-SA	SEC-ERBA	SEC-IAA	Trading book
Receivables	14	-	324	368	-	-
from residential construction loans	-	-	-	-	-	-
from total or partial commercial real estate loans	-	-	-	-	-	-
from corporates (including SMEs)	-	-	-	-	-	-
from own and purchased lease receivables	-	-	324	368	-	-
from automotive financing (excl. leasing)	14	-	-	-	-	-
from other retail business	-	-	-	-	-	-
from CDOs and ABS	-	-	-	-	-	-
Resecuritizations	-	-	-	-	-	-
Credit enhancements	-	-	-	-	-	-
Drawn liquidity facilities	-	-	-	-	-	-
Other balance sheet items	-	-	-	-	-	-
Total balance sheet items	*14*	-	*324*	*368*	-	-
Liquidity facilities	-	3,036	-	-	240	-
Derivatives	-	6	2	-	-	-
of which resecuritizations	-	-	-	-	-	-
Positions specifically for synthetic transactions	-	-	-	-	-	-
Other off-balance-sheet items	-	-	-	-	-	-
Total off-balance-sheet items	-	*3,042*	*2*	-	*240*	-
Total 31 December 2019	*14*	*3,042*	*326*	*368*	*240*	-
Total 31 December 2018	*15*	*4,044*	-	-	-	-

Figure 63: Total securitization positions retained or purchased (Article 449 (n) (ii) CRR)

The year-on-year decline in the balance sheet IRB items is due to the ending of an investor exposure and the decrease in the off-balance-sheet items reflects the ending of a Weinberg ABCP transaction with interest-bearing receivables. The rise in the balance sheet SEC-SA items is due to entering into a new securitization item outside the Weinberg ABCP program, for which the SEC-IRBA approach could not be applied.

As at 31 December 2019, 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 2019. 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.

As at the reporting date 31 December 2019, there were no securitization positions with a risk weight of 1250% (Article 449 (n (v)) CRR). There is therefore no need to provide a tabular breakdown of securitization positions.

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. The look-through approach and the supervisory formula approach are not presented as LBBW does not hold any securitizations in accordance with these provisions. Instead, the securitizations to be disclosed in accordance with SEC-SA are presented separately. The securitizations under the ratings based approach (old) and SEC-ERBA are recognized together, as are the securitizations under the Internal Assessment Approach (old) and SEC-IAA.

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%	14	0	-	-	14	0	-	-	-	-	-	-
40%	-	-	-	-	-	-	-	-	-	-	-	-
50%	-	-	-	-	-	-	-	-	-	-	-	-
100%	-	-	-	-	-	-	-	-	-	-	-	-
225%	-	-	-	-	-	-	-	-	-	-	-	-
350%	-	-	-	-	-	-	-	-	-	-	-	-
650%	-	-	-	-	-	-	-	-	-	-	-	-
1250%	-	-	-	-	-	-	-	-	-	-	-	-
Total	*14*	*0*	-	-	*14*	*0*	-	-	-	-	-	-
SEC-SA												
≤ 10%	74	1	-	-	74	1	-	-	-	-	-	-
> 10% ≤ 20%	252	2	-	-	252	2	-	-	-	-	-	-
> 20% ≤ 50%	-	-	-	-	-	-	-	-	-	-	-	-
> 50% ≤ 100%	-	-	-	-	-	-	-	-	-	-	-	-
> 100% ≤ 250%	-	-	-	-	-	-	-	-	-	-	-	-
> 250% ≤ 650%	-	-	-	-	-	-	-	-	-	-	-	-
> 650% ≤ 1250%	-	-	-	-	-	-	-	-	-	-	-	-
Total	*326*	*3*	-	-	*326*	*3*	-	-	-	-	-	-
Ratings based approach (old ratings based approach and SEC-ERBA)												
≤ 10%	358	3	-	-	358	3	-	-	-	-	-	-
> 10% ≤ 20%	-	-	-	-	-	-	-	-	-	-	-	-
> 20% ≤ 50%	-	-	-	-	-	-	-	-	-	-	-	-
> 50% ≤ 100%	109	9	-	-	109	9	-	-	-	-	-	-
> 100% ≤ 250%	-	-	-	-	-	-	-	-	-	-	-	-
> 250% ≤ 650%	-	-	-	-	-	-	-	-	-	-	-	-
> 650% ≤ 1250%	-	-	-	-	-	-	-	-	-	-	-	-
Total	*467*	*12*	-	-	*467*	*12*	-	-	-	-	-	-

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
Internal Assessment Approach (IAA and SEC-IAA)												
≤ 10%	841	7	-	-	841	7	-	-	-	-	-	-
> 10% ≤ 20%	1,173	13	-	-	1,173	13	-	-	-	-	-	-
> 20% ≤ 50%	993	28	-	-	993	28	-	-	-	-	-	-
> 50% ≤ 100%	175	9	-	-	175	9	-	-	-	-	-	-
> 100% ≤ 250%	-	-	-	-	-	-	-	-	-	-	-	-
> 250% ≤ 650%	-	-	-	-	-	-	-	-	-	-	-	-
> 650% ≤ 1250%	-	-	-	-	-	-	-	-	-	-	-	-
Capital deduction	-	-	-	-	-	-	-	-	-	-	-	-
Total	*3,182*	*57*	-	-	*3,182*	*57*	-	-	-	-	-	-
Sum total 31 December 2019	*3,990*	*72*	-	-	*3,990*	*72*	-	-	-	-	-	-
Sum total 31 December 2018	*4,059*	*71*	-	-	*4,059*	*71*	-	-	-	-	-	-

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 250 of the Delegated Regulation EU 2017/2401) in the 2019 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 6), LBBW also has further equity investments in its banking book with own funds requirements in accordance with the IRB 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.

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 when the market is active. For non-listed companies or in the absence of an active market, fair value 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	*538*	*547*	*390*
of which exchange-traded	390	390	390
of which not exchange-traded	149	157	-
Equity investments in financial institutions	*197*	*188*	-
of which exchange-traded	-	-	-
of which not exchange-traded	197	188	-
Equity investments in other companies	*164*	*167*	*17*
of which exchange-traded	15	17	17
of which not exchange-traded	149	150	-
Affiliated companies – banks	-	-	-
of which exchange-traded	-	-	-
of which not exchange-traded	-	-	-
Affiliated companies – financial institutions	*10*	*12*	-
of which exchange-traded	-	-	-
of which not exchange-traded	10	12	-
Affiliated companies – other companies	*572*	*580*	-
of which exchange-traded	-	-	-
of which not exchange-traded	572	580	-
Investment funds	*144*	*249*	-
of which exchange-traded	-	-	-
of which not exchange-traded	144	249	-
Total 31 December 2019	*1,626*	*1,743*	*407*
Total 31 December 2018	*1,816*	*1,814*	*440*

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.

EUR million	31/12/2019	31/12/2018
Realized gains (+) and losses (-) from sale/liquidation	*1*	*9*
Unrealized gains (+) and losses (-) from equity instruments	*72*	*33*
of which amounts recognized in capital under CRR:	*72*	*33*
in Tier 1 capital	72	33
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 described 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 and compliance risks. Business risks and reputation risks are not included under operationalThe 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 reporting) ▪ 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

A dual overall approach is in place, under which 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. In the LBBW Group, the execution of the processes implemented for the management of operational risks is mainly the responsibility of the decentralized divisions and subsidiaries.

The central parameters for handling operational risks are enshrined in the Group risk strategy, 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. The objective is to minimize or avoid risks, taking cost/benefit aspects into consideration. The internal control system, an open risk culture, the sensitivity to risks of all staff members and the handling of risks in an open manner are also key to limiting operational risks.

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. Depending on the extent of the loss, ad hoc reports are also compiled.

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 373m (previous year: EUR 375 m) as at 31 December 2019.

Further information on operational risks can be found in the chapter »Operational risks« in the risk report of LBBW's 2019 annual report, p. 79 et seqq.

13 Leverage ratio (Article 451 CRR)

Disclosure of the leverage ratio as at 31 December 2019 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 4.9% at 31 December 2019 (as at 30 June 2019: 4.5%). The leverage ratio exposure (»phase-in«) decreased from EUR 280.8bn as at 30 June 2019 to EUR 270.3bn as at 31 December 2019 (- EUR 10.4bn).

The decline in the leverage ratio exposure against the previous period (30 June 2019) chiefly reflects the decrease in exposures from securities financing transactions.

EUR million		Figures to be used
1	Total assets according to the published accounts	256,630
2	Adjustment for corporates that are consolidated for accounting purposes but do not form part of the regulatory basis of consolidation	-2,247
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	-11,068
5	Adjustment for securities financing transactions (SFTs)	4,818
6	Adjustment for off-balance-sheet items (i.e. conversion of off-balance-sheet exposures into credit equivalent amounts)	21,950
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	257
8	*Leverage ratio total exposure measure*	*270,340*

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

EUR million		Exposure value 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)	212,793
2	(Asset amounts deducted in the calculation of Tier 1 capital)	-554
3	Total of on-balance-sheet risk exposures (excluding derivatives, SFTs and fiduciary assets) (total of rows 1 and 2)	212,239
4	Future exposure for all derivatives transactions (i.e. excluding eligible additional contributions received in cash)	8,695
5	Premiums for the potential future exposure for all derivatives transactions (mark-to-market measurement method)	10,801
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)	-8,694
8	(Excluded CCP portion of customer-cleared trading positions)	-3,025
9	Adjusted effective nominal value of written credit derivatives	5,029
10	(Netting of adjusted effective nominal values and deduction of premiums for written credit derivatives)	-2,666
11	Total risk exposures from derivatives (total of rows 4 to 10)	10,140
Risk exposures from securities financing transactions (SFTs)		
12	Gross assets from SFTs (without recognition of netting) after adjustment for transactions booked as sales	25,813
13	(Netted amounts of cash liabilities and receivables from gross assets from SFTs)	-3,861
14	Counterparty default risk exposures for SFT assets	4,060
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)	26,012
Other off-balance-sheet risk exposures		
17	Off-balance-sheet risk exposures at their gross nominal value	58,146
18	(Adjustments for the conversion into credit equivalent amounts)	-36,197
19	Other off-balance-sheet risk exposures (total of rows 17 and 18)	21,950
(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	13,257
21	Leverage ratio total exposure measure (total of rows 3, 11, 16, 19, EU-19a and EU– 19b)	270,340
Leverage ratio		
22	Leverage ratio in %	4.9
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		Exposure value of the CRR leverage ratio
EU-1	Total of on-balance-sheet risk exposures (excluding derivatives, SFTs and excluded risk exposures), of which:	203,348
EU-2	Risk exposures in the trading book	13,856
EU-3	Risk exposures in the trading book, of which:	189,492
EU-4	Covered bonds	10,293
EU-5	Risk exposures treated as risk exposures towards sovereigns	40,234
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	177
EU-7	Institutions	40,984
EU-8	Collateralized by real estate liens	18,420
EU-9	Risk exposures from retail business	6,305
EU-10	Corporates	68,150
EU-11	Defaulted exposures	793
EU-12	Other risk exposures (e.g. equity investments, securitizations and other assets that are not loan commitments)	4,137

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 is defined in the Commission Implementing Regulation (EU) 2015/79. Under this, 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.[1] The value of encumbered assets is therefore fundamentally influenced by a bank's business model.

The disclosure in accordance with the Commission Delegated Regulation (EU) 2017/2295), which came into effect on 2 January 2018, was applied for the first time as at the reporting date 31 December 2018. Additional disclosure requirements in accordance with Article 2(2) relating to the quality of encumbered and unencumbered assets took effect on 2 January 2019 pursuant to Article 3 of the Delegated Regulation and were thus first published as at 31 December 2019.

At LBBW, disclosures on asset encumbrance are based on the regulatory basis of consolidation within the meaning of CRR. The basis of consolidation for the LCR, on the other hand, does not include ancillary services undertakings, proportionally consolidated companies or investment firms.

For an explanation of assets posted and transferred in accordance with accounting standards, please see LBBW's 2019 Annual Report (consolidated financial statement, notes, page 256 et seq., sections 56 and 67).

For this disclosure of encumbered assets, the medians were calculated on the basis of quarterly figures for the last twelve months. It should be noted that the totals are also calculated as a median on the basis of quarterly figures for the last twelve months. The total disclosed may therefore differ from the total of the sub-items.

A large part of the encumbered assets results from LBBW's function as the clearing bank for the savings banks. This causes an increase in encumbered assets allocated particularly to the derivatives, promotional pass-through loans and also repo transactions and loans category. LBBW has encumbered (on-balance-sheet) assets of EUR 94.3bn (previous year: EUR 85.2bn) and unencumbered assets of EUR 167.4bn (previous year: EUR 169.0bn). The encumbered on-balance-sheet assets primarily relate to the following positions:

- 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 30% (previous year: 31%) of the encumbered assets.
- Covered bonds: LBBW issues covered bond in accordance with German covered bond legislation. Accordingly, 30% (previous year: 32%) of the encumbered assets are for covered bonds. The figures include the statutory, the rating-related and the voluntary surplus cover.
- Derivatives: 24% (previous year: 18%) of the encumbered assets are related to OTC derivatives. Positive fair values under derivatives particularly result in an encumbrance as some of these are reported within gross asset encumbrance (without netting of the corresponding liability position). LBBW transacts derivatives under national and international agreements (German Rahmenvertrag and ISDA Master Agreement) and with corresponding credit support annexes.
- Repos: LBBW uses bilateral and triparty repo markets such as Eurex GC Pooling and Fixed Income Clearing Corporation (FICC) for funding purposes. A total of 1% (previous year: 2%) of the encumbered on-balance-sheet assets are used for repos. LBBW transacts repos under national and international repo contracts (Global Master Repurchase Agreement and Global Master Securities Lending Agreement).

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

The total of the cover pools for outstanding Pfandbriefe (public and mortgage Pfandbriefe) for the disclosure period (2019 financial year) was EUR 28.1bn (previous year: EUR 27.0bn). The cover pools also include overcollateralization of EUR 9.1bn (previous year: EUR 7.6bn), which is categorized as encumbered for the purposes of the asset encumbrance report. This comprises the legally required overcollateralization, overcollateralization required by rating agencies and, primarily, voluntary overcollateralization. This high overcollateralization is also a key reason for the high share of Pfandbriefe in comparison to total encumbered assets. This thus affects LBBW's asset encumbrance ratio.

LBBW has received collateral worth a total of EUR 47.6bn (previous year: EUR 45.4bn); of this, EUR 17.7bn (previous year: EUR 17.8bn) has been reused. The reused collateral is particularly related to repo and securities lending business.

At LBBW, the US dollar is currently a significant currency in the sense of Article 415 (2) CRR. The primary driver of assets in USD is loans and advances (excluding call loans). Collateral in USD, on the other hand, consists primarily of debt securities. Encumbrances in USD are immaterial in terms of their amount and result chiefly from repos and loans.

LBBW does not consider some of the unencumbered assets in the column »Carrying amount of unencumbered assets« listed in form A as suitable for encumbrance. This essentially includes receivables from reverse repos, derivative assets, majority interests, property plant and equipment and cash in hand.

1 See Commission Implementing Regulation (EU) 2015/79 of 18 December 2014, Chapter 1.7 for a definition

Repurchased covered bonds amounted to EUR 91.2m in the disclosure period (previous year: EUR 166.3m). These are unencumbered, as the underlying assets in the cover fund are fully encumbered. LBBW does not have any retained asset-backed securities.

	Carrying amount of encumbered assets		Fair value of encumbered assets		Carrying amount of unencumbered assets		Fair value of unencumbered assets	
EUR million		of which: assets that, unencumbered, would qualify for classification as EHQLA or HQLA		of which: assets that, unencumbered, would qualify for classification as EHQLA or HQLA		of which: EHQLA and HQLA		of which: EHQLA and HQLA
Assets of the reporting bank	*94,324*	*4,688*			*167,412*	*43,632*		
Equity instruments	419	160	419	160	744	197	1,314	197
Debt securities	4,248	2,248	4,166	2,180	28,535	15,239	28,789	15,399
of which: covered bonds	583	583	583	583	11,917	10,961	11,930	10,971
Of which: asset-backed securities	-	-	-	-	399	-	403	-
Of which: issued by states	1,460	1,438	1,420	1,400	3,643	3,057	3,793	3,121
Of which: issued by financial entities	2,583	664	2,567	664	24,104	11,531	24,041	11,542
Of which: issued by non-financial entities	191	128	192	128	385	283	453	325
Other assets	90,353	2,277			138,133	26,926		
Of which: derivative transactions	18,718				8,162			

Figure 72: Form A – assets

EUR million	Fair value of encumbered collateral received or own bonds issued		Unencumbered Fair value of collateral received or own bonds issued suitable for encumbrance	
		of which: assets that, unencumbered, would qualify for classification as EHQLA or HQLA		of which: EHQLA and HQLA
Collateral received by the reporting bank	*17,691*	*15,452*	*29,890*	*23,897*
Call loans	-	-	-	-
Equity instruments	19	15	61	52
Debt securities	17,638	15,406	29,835	23,851
of which: covered bonds	824	117	1,211	770
Of which: asset-backed securities	-	-	-	-
Of which: issued by states	13,235	12,961	10,188	9,411
Of which: issued by financial entities	3,797	1,549	17,581	13,112
Of which: issued by non-financial entities	395	344	1,775	1,180
Loans and advances excluding call loans	-	-	-	-
Other collateral received	-	-	-	-
Own bonds issue excluding own covered bonds or asset-backed securities	0	-	1,066	-
Own covered bonds and issued securities not yet pledged as collateral			91	-
Total of assets, collateral received and own bonds issued	*111,539*	*20,835*		

Figure 73: Form B – 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	*81,738*	*97,609*
of which: repurchase agreements	4,989	8,782

Figure 74: Form C – 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 risks

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	▪ Analysis of the overall funding requirement and funding potential ▪ Continuous stress testing and calculation of the risk from funding spreads ▪ Liquidity flow analysis (assessment of structural liquidity as basis for the planning of funding) ▪ Analysis of the investor base for possible concentrations
Risk monitoring and reporting	▪ Reports on day-specific liquidity gaps (for different locations and currencies) ▪ Monitoring of available liquidity reserves and of results from stochastic models for call risks ▪ Monitoring results from stress testing (from intraday up to a one year projection) ▪ Consolidated reports on the funding requirement and potential of the Group ▪ Reports and Analysis on liquidity and funding risks in the Board of Managing Director's risk and monitoring bodies ▪ Ongoing monitoring of LCR and NSFR
Risk management	▪ Specifications on liquidity risk tolerance (limits, survival times and stress test specifications) ▪ Management of assets and liabilities of the balance sheet via funds transfer pricing ▪ Active management of euro intraday liquidity ▪ Return-based management of economic and regulatory key performance indicators

Figure 75: Overview of issues relating to liquidity risk management

Risk measurement

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 Executive 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 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 fun-ding or reporting obligations. The liquidity risks for subsidiaries and affiliates are assessed as part of a regular risk inventory and, if material, are transferred to the Risk Management Group’s regulatory framework, which generally corresponds to the regulatory framework of LBBW (Bank).

Risk monitoring and reporting

The regular monitoring of liquidity risks from regulatory and economic perspectives is the responsibility of the LBBW Executive 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 as part of the second line of defense. 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 Executive Risk Committee via the overall risk report and the intraday liquidity. 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. In addition, a daily stress test for intraday liquidity was transferred to the liquidity risk tolerance in the fourth quarter of 2019.

Risk management

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

As part of the first line of defense, 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 regulatory requirements and the requirements with respect to liquidity risk tolerance. The regulatory liquidity requirements (LCR and, from 2021, NSFR) are already a key aspect of operational management and are actively managed and continuously monitored with the help of forecasts. 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. 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.

Treasury, in consultation with Risk Control, is responsible for developing methods to calculate internal funds transfer pricing. The ALCo is responsible for the FTP policy, 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. Methodological changes are monitored and approved by Group Risk Controlling with regard to their risk adequacy before being approved by the Board of Managing Directors on the recommendation of the ALCo.

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. Institutional investors, banks, savings banks and retail business again constituted the main sources of medium- and long-term funding in 2019. The product range includes Pfandbriefe and senior preferred, senior non-preferred, Tier 2 and Additional Tier 1 issues in various currencies, which were issued both by way of private placements and in the benchmark segment. Of the nine benchmark issues, three were green bonds and one was a social bond.

Treasury is responsible for securing the intraday liquidity. If necessary, it actively manages the daily payments via the Bundesbank account and calculates liquidity requirements up to the end of the day, while continuously taking into account payment inflows and outflows in euro that only become known during the course of the day. Liquidity Risk Control evaluates daily sales in euro and monitors intraday liquidity using calculated key figures and a daily stress test.

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, tested as part of a liquidity crisis exercise and resolved anew by the Board of Managing Directors each year.

Risk situation of the LBBW Group

The consequences of high surplus liquidity on the market, which began in 2019, can also be seen in LBBW's extensive liquidity. 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 2019, the funding needs and the counterbalancing capacity were as follows:

EUR million	3 months		12 months	
	31/12/2019	31/12/2018	31/12/2019	31/12/2018
Funding requirements from the business portfolio (deterministic cash flow)	5,248	-1,299	-221	-6,911
Funding requirement from material call risks (stochastic cash flow)	16,713	16,267	33,777	31,837
Funding potential from free liquidity reserves	22,771	20,613	29,658	26,855
Funding potential in the market	48,450	44,512	64,732	59,085
Overcollateralization	49,260	50,156	60,834	61,014

Figure 76: Overview of funding requirements and counterbalancing potential

The funding requirement from the business portfolio was negative in the twelve-month forecast at the year-end, as liquidity inflows exceeded the outflows, effectively resulting in a need for investment instead. After a 2018 marked largely by a consistent need for investment, at the end of 2019 there was again almost a continuous funding requirement from the cash flow in the business portfolio. As previously, net inflows in euro (investment requirements) are offset chiefly by funding needs in USD and GBP, material foreign currencies for LBBW. The funding potential was adequate to compensate for any short-term liquidity outflows and continues to ensure significant overcollateralization on a three (approx. EUR 49bn) and 12-month horizon (approx. EUR 61bn). 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)	
	31/12/2019	31/12/2018	31/12/2019	31/12/2018
Rating downgrade scenario	25,832	18,334	45,808	42,749
Financial market crisis scenario	26,603	18,918	58,838	54,761
Combined scenario of market crisis with downgrade	27,076	19,181	53,993	50,309

Figure 77: Results of the economic stress scenarios

The targeted stress resistance was met throughout 2019. 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. Sufficient overcollateralization was also available for intraday liquidity in the foreign currency stress tests and in the euro stress test at all times.

In addition to the requirements for stress resistance, the 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. Overall Group limits (euro including foreign currencies) were observed at all times in 2019. Limits for the closely monitored foreign currencies USD and GBP are designed so that these take into account both risk-based and return-based management. This resulted in the GBP requirements being temporarily exceeded, but these were brought back into line very promptly.

The prescribed minimum value of 100% for the European indicator for short-term liquidity »Liquidity Coverage Ratio (LCR)« for 2019 was observed at all times and was above the requirement as at year-end 2019 at 123.6% (31 December 2018: 114.8%). LBBW has been preparing for the longer-term liquidity requirement of a »Net stable funding ratio« (NSFR) applicable from 2021 onwards and already meets this requirement in a closely monitored process.

At the time of preparing this report, the medium to long-term impact of the COVID-19 crisis on LBBW's liquidity cannot be estimated. The sources of call risks from deposits and credit commitments, which are monitored daily, experienced fluctuation only within normal ranges. Despite the much stricter assumptions in comparison to the actual situation, the regular liquidity stress tests continue to show good surplus cover of assumed or existing funding potential in relation to funding requirements. Nonetheless, the comfortable liquidity situation at present could deteriorate if the crisis worsens. Increased drawdowns, declining deposits and necessary collateral positions due to negative developments in market factors such as interest rates are particularly conceivable.

Risk management system for Pfandbrief business

A differentiated limit system has been established to monitor risks from the Pfandbrief business (Section 27 of the German Pfandbrief Act(PfandBG)). Regular stress tests are conducted regarding present value overcollateralization. A procedure for lowering risks has been implemented in the event that the limits established are reached. The Board of Managing Directors and the Executive Risk Committee are informed each quarter about compliance with the requirements of the Pfandbrief Act and utilization of statutory and internal limits. Statutory requirements were observed at all times in 2019. The risk management system is reviewed at least once per year.

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 twelve 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 100% required for 2019.

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 twelve 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.

In EUR million	Total unweighted value (average)				Total weighted value (average)			
Quarter ends on	31/03/2019	30/06/2019	30/09/2019	31/12/2019	31/03/2019	30/06/2019	30/09/2019	31/12/2019
Number of data points used in the calculation of averages	12	12	12	12	12	12	12	12
High-quality liquid assets								
Total high-quality liquid assets (HQLA)					62,487	64,036	63,106	61,487
Cash outflows								
Retail deposits and deposits from small business customers, of which	14,730	15,135	15,345	15,427	1,341	1,385	1,410	1,419
stable deposits	7,655	7,786	7,830	7,833	383	389	391	392
less stable deposits	7,075	7,349	7,515	7,595	958	996	1,018	1,027
unsecured wholesale funding	72,386	72,467	72,115	72,989	48,118	48,072	47,046	47,028
operational deposits (all counterparties) and deposits in networks of cooperative banks	17,740	18,449	19,262	19,876	4,293	4,447	4,632	4,762
non-operational deposits (all counterparties)	43,695	42,574	41,792	41,945	32,874	32,181	31,353	31,098
unsecured debt	10,951	11,444	11,061	11,168	10,951	11,444	11,061	11,168
secured wholesale funding					2,751	2,664	2,535	2,451
additional requirements	29,995	30,672	31,123	31,370	8,679	8,719	8,799	8,947
outflows related to derivative exposures and other collateral requirements	3,799	3,679	3,931	4,210	2,595	2,476	2,584	2,766
outflows related to loss of funding on debt products	121	148	133	142	121	148	133	142
credit and liquidity facilities	26,075	26,845	27,059	27,018	5,963	6,095	6,082	6,039
other contractual funding obligations	4,946	5,225	5,768	5,971	4,764	5,037	5,577	5,783
other contingent funding obligations	27,876	28,520	29,291	29,781	357	327	647	1,208
Total cash outflows					*66,010*	*66,204*	*66,014*	*66,836*

In EUR million	Total unweighted value (average)				Total weighted value (average)			
Quarter ends on	31/03/2019	30/06/2019	30/09/2019	31/12/2019	31/03/2019	30/06/2019	30/09/2019	31/12/2019
Number of data points used in the calculation of averages	12	12	12	12	12	12	12	12
Cash inflows								
Secured lending (e.g. reverse repos)	17,661	18,312	18,893	18,956	3,632	3,774	3,636	4,096
Inflows from fully performing exposures	15,886	15,227	14,335	15,128	11,039	10,474	9,657	10,527
Other cash inflows	6,976	6,744	7,442	7,806	5,660	5,382	6,052	6,418
(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	*40,523*	*40,283*	*40,670*	*41,890*	*20,331*	*19,630*	*19,345*	*21,041*
Fully exempt inflows	-	-	-	-	-	-	-	-
Inflows subject to 90% cap	-	-	-	-	-	-	-	-
Inflows subject to 75% cap	36,695	36,246	36,526	37,670	20,332	19,631	19,345	21,040
Total adjusted value								
Liquidity buffer					62,487	64,036	63,106	61,487
Total net cash outflows					45,679	46,574	46,668	45,793
Liquidity coverage ratio in %					136.8	137.6	135.4	134.3

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

Further qualitative information on LCR complementing the LCR disclosure

The aim of LBBW's funding mix strategy is to achieve international 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 2019 apart from the retail business were investments by international institutional investors, banks and savings banks. Pfandbriefe are also a major source of funding for LBBW. These were essentially 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 maturities which are relevant to LCR. The Bank has very stable customer deposits, especially from its retail customers. 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 2019, the average share of outflows calculated based on the HLBA amounted to around 3% 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 report.

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

List of abbreviations

ABCP	Asset backed commercial paper
ABS	Asset backed security
ARC	Aggregate risk cover
AT1	Additional Tier 1 capital
BaFin	Bundesanstalt für Finanzdienstleistungsaufsicht (German Federal Financial Supervisory Authority)
BCBS	Basel Committee on Banking Supervision
BelWertV	Beleihungswertermittlungsverordnung (German Regulation on the Determination of Mortgage Lending Value)
CCP	Central counter party
CCP	Central counterparty
CCR	Counterparty credit risk
CCR	Customer compact rating
CDO	Collateralised debt obligation
CDS	Credit default swap
CET1	Common equity Tier 1
CLN	Credit linked note
COREP	Common solvency ratio reporting
CRD	Capital Requirement Directive
CRR	Capital Requirement Regulation
CRSA	Credit risk standard approach
DCF	Discounted cash-flow
DSGV	Deutscher Sparkassen- und Giroverband (German Savings Banks Finance Group)
EaD	Exposure at default
EBA	European Banking Authority
EEA	European Economic Area
EL	Expected loss
FICC	Fixed Income Clearing Corporation
FINREP	Financial reporting
HGB	Handelsgesetzbuch (German Commercial Code)
IAA	Internal Assessment Approach
ICAAP	Internal Capital Adequacy Assessment Process
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 rating based approach
ISDA	International Swaps and Derivatives Association
LGD	Loss given default
MaRisk	Minimum Requirements for Risk Management
NAV	Net asset value
OTC	Over the counter
PD	Probability of default
RBC	Risk-bearing capacity
RCP	Risk classification procedure
SAG	Sanierungs- und Abwicklungsgesetz (German Recovery and Resolution Act)
SEC	Securitisation
SEC-ERBA	Securitisation – external ratings based approach
SEC-IAA	Internal Assessment Approach
SEC-SA	Securitisation – standardized approach
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
UTP	Unlikely to pay
VaR	Value-at-risk

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LBBW

Breaking new ground

Landesbank Baden-Württemberg
www.LBBW.de
kontakt@LBBW.de

Headquarters

Stuttgart
Am Hauptbahnhof 2
70173 Stuttgart, Germany
Phone + 49 (0) 711 127-0
Fax + 49 (0) 711 127-43544

Mannheim
Augustaanlage 33
68165 Mannheim, Germany
Phone + 49 (0) 621 428-0
Fax + 49 (0) 621 428-72591

Karlsruhe
Ludwig-Erhard-Allee 4
76131 Karlsruhe
Phone + 49 (0) 721 142-0
Fax + 49 (0) 721 142-23012

Mainz
Große Bleiche 54 – 56
55116 Mainz, Germany
Phone + 49 (0) 6131 64-37800
Fax + 49 (0) 6131 64-35701