Risk report

Risk policy and strategy

The basic principles underlying the Deka Group's risk policy and strategy remain largely unchanged from the previous year. In order to achieve its commercial objectives, the Deka Group accepts certain risks in line with strategic requirements. These risks are limited by a comprehensive risk management system that covers all types of risk and all business divisions, sales and corporate centres in order to ensure the success of the Deka Group as a business. The framework for business and risk management is provided by the general concept of risk appetite (Risk Appetite Framework – RAF), which forms the main basis for assessing the adequacy of internal capital and liquidity (ICAAP/ILAAP) and is an integral part of the Deka Group's strategy system.

Concept of risk appetite

The first starting point for the concept of risk appetite is a description of the desired risk profile that is implied by our customer-centred business model.

To successfully implement its vision of the *Wertpapierhaus* while avoiding conflicts of interest, the Deka Group exploits the advantages arising from the interconnection of its business activities in fund management, lending and capital markets. These activities give rise principally to counterparty, market, business and operational risks, as well as to liquidity risk (which does not directly affect the income statement).

The Deka Group's focus remains on added-value-generating operations that are in demand from both the savings banks and their end customers where the risks are strictly limited and for which adequate expertise is available. As part of the long-term business strategy defined by the Board of Management and the risk strategy consistent with it, risk positions are entered into primarily in connection with customer transactions or when they can be hedged on the market.

In addition, risks are incurred if they are conducive to liquidity management or if they are required to leverage synergies in investment fund business. Business activities in new products or new markets, and the establishment or acquisition of new business units, are undertaken only after a thorough risk evaluation has been performed.

An efficiently structured risk inventory ensures that the Deka Group has an overview of its risk profile at all times. The risk inventory exercise is carried out on an annual basis, and at other times as required, in order to determine which risks could have a significant negative impact on its financial position (including in terms of capital adequacy, earnings or liquidity). In the course of this process, DekaBank takes into account both external as well as internal factors, the underlying assumptions of which are reviewed regularly and on an ad hoc basis as necessary.

Particular consideration is given here to risk concentrations to which the Deka Group consciously exposes itself in connection with its business model. The main examples of this are the Group's focus on the domestic public sector, on German savings banks and their customers, and on selected capital market participants and central counterparties, which is partly due to its function as a securities and collateral platform.

The second starting point for the concept of risk appetite, in addition to the risk profile, is risk capacity – the maximum amount of risk that the Deka Group can accept with respect to its available funds. The risk capacity for profit-affecting risks is set in the course of the economic risk-bearing capacity analysis, while taking due account of risk concentration. It represents the upper limit of acceptable risk and corresponds to the Deka Group's internal capital. For liquidity risk (insolvency risk), risk capacity is defined as the amount of free liquidity that is in principle available. It thus corresponds to the positive balance of the funding matrix for normal business operations.

Risk appetite is defined, within the scope of these risk capacity values, as the overall aggregate risk for individual risk types that the Deka Group is willing to accept in order to achieve its strategic objectives and business plan.

The details of the business and risk strategy are specified and quantified as part of medium-term planning. Medium-term planning involves an integrated planning process for profits, capital and risk for the next three years, with account being taken of potential adverse developments.

Risk limits for profit-affecting risks are derived from the risk and capital planning, taking into account the desired risk profile and the available risk capacity (risk capital allocation). The overall risk appetite is laid down as part of this process. It is set via a two-stage process. The maximum risk appetite (i.e. the upper limit) is obtained by deducting a capital buffer for stressed circumstances from the risk capacity. The actual risk appetite for profit-affecting risks is the risk capital allocated for the overall risk position.

Non-financial risks are quantified, insofar as possible, as subcategories of operational risk and business risk. In addition to the quantitative risk appetite, qualitative overall risk tolerance rules are also set so that the particular features of non-financial risks are appropriately reflected. Such risks include compliance risk and reputational risk, among others.

For liquidity risk, the Deka Group has defined its risk appetite such that an indefinite survival horizon exists under an extreme hypothetical stress scenario of a simultaneous institution-specific and market-wide stress event. Compliance with this risk appetite is ensured firstly by illustrating the impact of the simultaneous occurrence of institution-specific and market-wide stress events in a "combined stress scenario" funding matrix. As a second step, limits on liquidity balances across all relevant maturities that allow only positive balances ensure that the Group is solvent at all times with an indefinite survival horizon. An early warning threshold set at €1.5bn represents a first escalation level in this context.

The concept of risk appetite also covers procedures for monitoring compliance with allocated risk capital. These include management instruments, regular reporting, rulebooks, controls and processes, as well as risk governance in the sense that roles and responsibilities are laid down for implementing and monitoring risk appetite. Taking risk concentrations into account, the Deka Group has thus established limits for all risks classified as significant during the risk inventory and has implemented rigorous risk management.

The concept of risk appetite described above and the procedures for monitoring compliance with it form one of the three fundamental pillars of the Group's risk culture. They are complemented by sound governance and a remuneration system that encourages appropriate risk behaviour. Processes are in place to ensure that these three pillars are continuously adjusted to changing circumstances. Staff and leadership behaviour – risk culture in the narrower sense – are shaped by the rules set down in the Code of Ethics and by the Deka Principles of Leadership, in addition to the aforementioned formal components. The risk culture framework adopted in the reporting year lays down binding guidelines for the responsible handling of risks in the Deka Group and for compliance among employees, managers and Board members in relation to this. It also sets out the guiding principles that detailed rules on processes and tools have to adhere to.

Strategy process

In accordance with the German Minimum Requirements for Risk Management (*Mindestanforderungen an das Risikomanagement* – MaRisk), the Group uses a systematic strategic process to ensure that its Group-wide business strategy, management and structure, as well as the corresponding divisional and sales strategies and the risk strategy, are reviewed on a regular basis. The reviews consider whether these items are consistent, complete, sustainable and up-to-date. The process covers the planning, implementation and evaluation of the strategies and any necessary adjustments to them. Division-specific targets for risk and profit are used in order to ensure that the business and risk strategy is implemented appropriately in the business divisions.

The sub-risk strategies developed for significant types of risk identified during the risk inventory are derived from the Deka Group's risk strategy as well as the strategies of the business divisions. These risk strategies provide specific details regarding risk monitoring and management. They are also reviewed at least once a year, revised if necessary, approved by the Board of Management and discussed with the Administrative Board.

Organisation of risk management and control

Board of Management and Administrative Board

The Board of Management is responsible for the development, promotion and integration of an appropriate risk culture within the Deka Group and is clearly committed to risk-appropriate behaviour. It is also responsible for establishing, enhancing and monitoring the effectiveness of the risk management system. Within the risk management organisation, the Board of Management makes decisions on the Deka Group's strategy and defines the amount of overall risk permitted at Group level. This includes decisions on the form and implementation of the risk appetite concept. The Board also sets the economic capital allocations for the different types of risk and the business divisions, including the Treasury corporate centre. It thereby takes decisions, in particular, on the governance framework for the internal processes used to assess the adequacy of internal capital and liquidity (ICAAP and ILAAP) and is responsible for implementing these processes. This includes setting limits at Group level for the individual risk types.

The Administrative Board, together with the relevant committees it has established – the Risk and Credit Committee and the Audit Committee – is responsible for monitoring the Deka Group's risk management system. Prior to every meeting of the Administrative Board, the Risk and Credit Committee meets to discuss in detail matters impacting the Group's risk exposure and risk management. It also reviews the Group's strategic direction with the Board of Management. The Risk and Credit Committee also acts as a credit approval body within the scope of the applicable authorisation guideline. The Audit Committee is an oversight body that concerns itself with the results of internal and external audits. It thereby contributes to ensuring the appropriateness and effectiveness of the Deka Group's monitoring, control and risk management arrangements.

Management committees
The Board of Management is supported in its management role by various management committees.

The Risk Management Committee (*Managementkomitee Risiko* – MKR) meets once a month and advises the Board of Management on matters regarding significant risks at Group level and on addressing, analysing and assessing issues that could have a significant influence on the total risk profile or profitability of the Group. The committee thus makes an important contribution to promoting a Group-wide risk culture. The voting members of the MKR include the Head of the Risk Control department, the managers of the Risk Control, Credit Risk Office, Finance and Risk Control Capital Market Funds departments, the COOs for the Asset Management Securities and Asset Management Real Estate business divisions, the COO for the banking divisions & depositary, and the heads of the Compliance and Legal corporate centres. The MKR is supported in this function by sub-committees, which each have individual core duties.

The Management Committee for Assets and Liabilities (*Managementkomitee Aktiv-Passiv* – MKAP), which meets every two weeks, primarily drafts resolutions on matters relating to the management of interest rates, currency, liquidity and refinancing and to the capital and balance sheet structure. In addition, it plays a role in limiting market price risk by making recommendations on the allocation of top-level limits for the Capital Markets business division and the Treasury corporate centre. Measures to be taken in the event of a liquidity crisis are also confirmed in the course of the MKAP's regular review. Membership of the MKAP is made up of the departmental heads responsible for Treasury, Finance, Risk Control and Capital Markets business and the heads of the Treasury, Capital Markets business, Risk Control and Finance corporate centres.

Sub-committees of the Risk Management Committee
The Stress Testing Committee supports the Board of Management in relation to the overall appraisal of the regular macroeconomic stress tests (covering all risk types) and risk-type-specific stress tests. Stress tests form an integral part of the Deka Group's risk management. The duties of the Stress Testing Committee include in particular the assessment and appraisal of stress test results as well as general responsibility for setting stress test scenarios and processes.

The Models Committee is a Group-wide, cross-divisional body that pools together and assesses current trends and validation issues with regard to valuation and risk models, and prepares content accordingly for the MKR, the Board of Management and senior management of Deka Group companies. The committee thus makes an important contribution to ensuring overarching consistency in the models employed. Furthermore, the Models Committee represents the central operational body for assessing model risks, with the aim of ensuring appropriate treatment of model risk in the Deka Group.

Additional committees that are relevant to counterparty risk management include the Country Risk Committee, which assesses country risk, the Monitoring Committee, which monitors and manages exposures at risk of default, the Risk Provisioning Committee, which performs regular analysis and examination of matters relating to the planning, monitoring and management of loan loss provisions as well as monitoring and managing restructuring and liquidation cases, and the Rating Committee, which analyses and monitors the internal rating procedures (see counterparty risk).

The duties of the Risk Talk are to regularly analyse, discuss and make decisions regarding matters in connection with the risk management and monitoring processes in the Capital Markets business division's operational processes. The emphasis is on the assessment, in relation to market or counterparty risks, of matters that could significantly influence the risk profile and/or profitability of the Capital Markets business division.

Business divisions and central functions

All business divisions and the Treasury corporate centre operate within the scope of the strategic requirements. In addition, they operate within the framework set by the Board of Management on the basis of recommendations from the MKR and MKAP. The Treasury corporate centre also manages market price risks in the banking book and the liquidity, refinancing and equity of the Deka Group within the limits.

The main responsibility of the Risk Control corporate centre, which is independent of the business divisions, is to develop a standardised and self-contained system to quantify, limit and monitor all significant risks associated with the Group's business activities. Its risk measurement procedures are continually updated in line with economic and regulatory requirements. Risk Control also monitors compliance with the limits approved by authorised decision makers, and immediately reports any limit breaches to them.

The Credit Risk Office corporate centre is primarily responsible for providing a second opinion independent of front office operations, for creating and/or approving ratings and for verifying and approving specific collateral. The office also acts as the central statistical monitoring centre for early-stage risk identification. In addition – acting independently of front office operations – the Credit Risk Office is responsible for closely monitoring and managing troubled loans as well as for dealing with restructuring and liquidation cases (work-out exposures).

The Compliance corporate centre is comprised of functions that monitor and minimise selected non-financial risks. On behalf of the Deka Group, it covers the regulatory functions of the Compliance Officer as set out in the German Banking Act (*Kreditwesengesetz* – KWG), the German Securities Trading Act (*Wertpapierhandelsgesetz* – WpHG) and the German Investment Code (*Kapitalanlagegesetzbuch* – KAGB). It also covers those functions assigned to the Money Laundering Officer pursuant to the German Money Laundering Act (*Geldwäschegesetz* – GwG) and the KWG, and represents the "Central Office" for the Money Laundering Officer and in relation to the obligations to prevent criminal acts under section 25h KWG. Furthermore, the Compliance corporate centre fulfils the roles of Group Money Laundering Officer, "Responsible Officer" as required for Qualified Intermediaries (QIs) under the Foreign Account Tax Compliance Act (FATCA), Information Security Officer, Data Protection Officer and Single Officer. The Compliance corporate centre has been headed by Oliver Görke since 1 August 2018.

The Internal Audit corporate centre is an independent unit that supports the Board of Management and other management levels in their control and monitoring functions. It examines and assesses all activities and processes on the basis of an annual audit plan that is drawn up with a risk-based approach, using a scoring model, and then approved by the Board of Management. One of the unit's most important tasks is to evaluate the business organisation with a focus on whether the internal control system and, in particular, risk management and monitoring are suitable and appropriate. Internal Audit also audits compliance with legal, regulatory and internal banking requirements. The Administrative Board is responsible for monitoring the internal audit system. It delegates this task to the Audit Committee.

In addition, all corporate centres and business divisions are responsible on a decentralised basis for identifying, measuring and managing their respective operational risks.

Organisational structure of risk management in the Deka Group *(Fig. 17)*

		Counterparty risk	Market price risk	Liquidity risk	Operational risk	Business risk	Shareholding risk
Administrative Board							
Risk and Credit Committee	- Overview of current risk situation/risk management system - Discussion of strategic direction with Board of Management - Credit approval body	●	●	●	●	●	●
Audit Committee	- Reviews results of internal and external audits	●	●	●	●	●	●
Board of Management	- Determines strategic direction - Responsible for Group-wide risk management system - Determines risk appetite - Allocates risk capital to risk types and business divisions, incl. setting the limits for individual risk types at business division level	●	●	●	●	●	●
Management Committee for Risk (Managementkomitee Risiko – MKR)	- Assists the Board of Management in matters relating to significant existing and prospective risks - Supports the Board of Management with the evaluation of issues that have a significant effect on the overall risk profile - Prepares draft resolutions for the Board of Management and makes decisions within the scope of the authority granted to it - Supplemented by various sub-committees	●	●	●	●	●	●
Stress Testing Committee	- Assesses and appraises stress test results - Specifies stress testing scenarios and processes - Reports and makes recommendations for action to the Board of Management	●	●	●	●	●	●
Models Committee	- Assesses current trends and validation issues with regard to valuation and risk models - Central operational body for assessing model risks	●	●	●	●	●	●
Country Risk Committee	- Assesses country risks - Assesses and further develops the methodology for limiting country risks - Approves/sets country limits	●					
Monitoring Committee	- Defines, assesses and further develops the early warning indicators and classification criteria - Monitors and manages troubled loans on the watch list	●					
Ratings Committee	- Enhances and maintains internal rating procedures and rating processes - Responsible for approving policies and regulations relating to the internal rating procedures	●					
Risk Provisioning Committee	- Plans, manages and monitors loan loss provisions - Monitors and manages restructuring and liquidation cases	●					
Risk Talk	- Supports the MKR/Board of Management in connection with risk management and monitoring processes in the Capital Markets business division's operational processes - Emphasis on market price and counterparty risk	●	●	●	●	●	

		Counterparty risk	Market price risk	Liquidity risk	Operational risk	Business risk	Shareholding risk
Management Committee for Assets and Liabilities (Management komitee Aktiv-Passiv – MKAP)	- Supports the Board of Management in matters relating to interest rate and FX management, liquidity and funding management, capital and balance sheet structure management - Evaluates the measures planned for liquidity crises - Prepares draft resolutions for the Board of Management	●	●	●	●	●	●
AM Securities business division	- Conducts transactions in line with strategic guidelines	●	●	●		●	●
AM Real Estate business division	- Conducts transactions in line with strategic guidelines	●	●	●		●	●
AM Services business division	- Conducts transactions in line with strategic guidelines	●	●	●		●	
Capital Markets business division	- Conducts transactions in line with strategic guidelines	●	●	●		●	
	- Makes decisions within the guidelines established by the MKAP and sets limits within the division		●	●			
Financing business division	- Conducts transactions in line with strategic guidelines	●		●		●	●
Treasury (Corporate Centre)	- Conducts transactions in line with strategic guidelines	●	●	●			
	- Makes decisions within the guidelines proposed by the MKAP and established by the Board of Management and sets limits within the corporate centre - Manages market price risks in the banking book, manages the liquidity and refinancing of the Deka Group		●	●			
Risk Control (Corporate Centre)	- Develops and updates system to quantify, analyse and monitor risks - Reports to Board of Management and Administrative Board - Determines/monitors risk-bearing capacity - Monitors approved limits	●	●	●	●	●	●
Credit Risk Office (Corporate Centre)	- Administrative office for early risk identification - Market-independent second recommendation - Reviews and/or approves ratings - Checks certain collateral - Management of troubled and non-performing loans (work out) - Loan administration - Responsible for lending-related processes	●					
Equity investments (Corporate Centre Corp. Development)	- Manages equity investment portfolio						●
Compliance (Corporate Centre)	- Monitors selected non-financial risks via specialised functions - Overall controlling of operational risks - Functions as Compliance Officer as set out in the German Banking Act (KWG), German Securities Trading Act (WpHG) and German Investment Code (KAGB), as Money Laundering Officer pursuant to the German Money Laundering Act (GwG) and as Central Office in line with the requirements of the KWG - Functions as Responsible Officer under QI and FATCA - Monitors IT security measures				●		
Internal Audit (Corporate Centre)	- Audits and evaluates all activities/processes (especially risk management system)	●	●	●	●	●	●
All business divisions and Corporate Centres	- Identify, measure and manage operational risks on a decentralised basis				●		

Three Lines of Defence model

Risk management involves active management of the Deka Group's risk position. The distribution of risk-related activities and associated controls across several organisational units requires proper assignment and delineation of the respective responsibilities and functions. Ever greater significance is attributed to an effective and properly functioning risk management system across all organisational units, which has no control gaps, conflicts of interest or redundancy and takes into consideration the risk strategy of DekaBank. This also promotes clear-cut governance.

The "Three Lines of Defence" model practised by DekaBank is designed to ensure compliance with and verification of the risk framework stipulated by the risk strategy, including the regular review of ICAAP and ILAAP. The operational business units responsible for exposures are – as the first line of defence – responsible for identifying, assessing and managing the risks involved in any business conducted. This also includes transactions to minimise total risk at Group level in day-to-day operations. The controls forming the first line of defence are supplemented and enhanced by the independent downstream organisational units that carry out risk management functions as part of the second line of defence (e.g. the Risk Control, Credit Risk Office and Compliance corporate centres). These units monitor compliance with the requirements of corporate policy independently of front office and trading operations. The third line of defence is the Deka Group's Internal Audit department, which also exercises its functions independently.

It is ensured that the requisite personnel resources are available to carry out the control functions, both in terms of the staff capacity needed to assess and monitor risks and in terms of the sufficient capability of the staff concerned. The systems and equipment provided for all control functions ensure that the ongoing processing, management and monitoring requirements arising from the nature and scope of the business carried out are met.

Further developments in risk management

During the year under review, the Deka Group refined parts of its risk management and control in terms of both its organisation and risk management concepts, taking due account of regulatory requirements.

In November 2018, the ECB published two guides setting out its expectations regarding banks' internal processes for ensuring capital (ICAAP) and liquidity (ILAAP) adequacy. Both guides are applicable beginning in 2019, and the Deka Group therefore began its planning and implementation work during the reporting year. One focal point of these activities was aligning the requirements with a normative perspective as part of the ICAAP and ILAAP. In this context, there are also plans to make methodological changes to the risk-bearing capacity concept for the economic perspective of the ICAAP during the first quarter of 2019. A revised definition of internal capital and of the overall management concept is planned in light of the requirement to apply a going concern approach for the ICAAP. Here, the non-inclusion of subordinated capital components will increase the utilisation of risk capacity.

Efforts towards the implementation of the expanded MaRisk requirements, which form the basis of regulation in Germany, continued during the reporting year. Among other things, this encompassed the requirements concerning the risk culture. Partly in view of the Guidelines on internal governance that took effect on 30 June 2018, Deka has adopted a Group-wide risk culture framework. This describes how the Deka Group understands the risk culture and risk culture process.

In the context of the data architecture and risk data quality management requirements and of the reporting based on this, DekaBank further expanded and supplemented its underlying systems and processes in the reporting year. For example, the quality checks conducted during risk data aggregation will be combined, documented and monitored in a single system in future. The same applies to the documentation of the underlying data flows, key taxonomies and related data governance. This will enable prompter, more direct monitoring of any irregularities, thereby allowing targeted, continuous improvement of the underlying systems. In addition, the reporting system itself was enhanced in 2018.

Alongside individual measures to facilitate the analysis of particular indicators, an approach was developed that integrates the economic and normative perspectives for the purposes of standard reporting. This also meets the requirements concerning the new design of the ICAAP/ILAAP.

Given the increased significance of non-financial risks, the MKR sharpened its approach in the reporting year. From the beginning of 2019, the MKR will discuss financial risks and current risk reporting on a monthly basis. Non-financial risks and methodological issues will be addressed quarterly. In addition to this, the responsibilities of the Compliance corporate centre were expanded with effect from 1 October 2018. They now include functions to monitor and minimise selected non-financial risks as well as the overall control of operational risks.

To meet the requirements of the ECB guide on internal models published in November 2018, DekaBank has initiated appropriate measures in relation to the market risk model. These will continue in 2019. The measures are in keeping with the findings of an on-site audit of the market risk model conducted in 2017 in the context of the supervisory review of internal models under Pillar 1 of the Basel capital regulations (targeted review of internal models – TRIM). The review aims to reduce the variability of model results and thereby increase confidence in internal models. It affects the internal rating models for credit risk (IRBA), internal market risk models (IMA) and internal models for estimating exposure to counterparty risk (IMM). In 2019, DekaBank will undergo an on-site audit under the IRB approach. TRIM audits concerning counterparty risk do not affect DekaBank.

The potential economic impact of changes to the Credit Risk Standardised Approach (CRSA) and the Internal Ratings Based Approach (IRBA) that are currently planned as part of the finalisation of Basel III (Basel IV) continues to be monitored. The same applies with regard to the Fundamental Review of the Trading Book (FRTB) and the scheduled introduction of the new Standardised Measurement Approach (SMA) to calculating operational risk capital, both of which could also potentially affect Pillar II of the Basel framework.

Model adjustments were made in the context of macroeconomic stress tests during the reporting year. Overall, these have only a moderate impact on the projected utilisation of risk capacity. Specifically, the proxy model for calculating credit risk was replaced by integration of the productive model, and the potential variance from plan was calculated more conservatively in the business risk.

Overall risk position of the Deka Group

See also: Opportunities report: pages 55 ff.

The risk position presented in the risk report relates to the Deka Group's risk position overall, and therefore corresponds to the definition used as the basis for presentation of the Deka Group's business development and profit performance in the economic report. The report focuses on risks that are relevant from the point of view of the Group. Opportunities that might be used to counteract an increase in risk are presented separately in the opportunities report.

Risk definitions, concentrations and measurement

The individual risk types for the purposes of risk monitoring and risk management are derived from the annual risk inventory. Risk types considered to be significant, which are backed by economic risk capital, include market price risk, counterparty risk, operational risk, liquidity risk and business risk. Liquidity risk is also classified as significant but is managed and monitored outside the risk-bearing capacity analysis.

A distinction is drawn between financial and non-financial risks, based on the context in which risks are incurred and/or arise. Financial risks are incurred consciously in direct connection with individual transactions in order to generate income. Non-financial risks, by contrast, are inherent in a particular business activity but are not incurred in order to achieve profit. Non-financial risks include, in particular, operational risk and business risk.

Counterparty risk

Counterparty risk is the risk of financial loss resulting from the deterioration in the creditworthiness of a borrower, issuer or other counterparty (migration risk) or when the counterparty is unable to fulfil its contractually-agreed obligations, or unable to fulfil them in a timely manner (default risk). Counterparty risk also includes the risk of changes in specific provisions: the risk that a specific provision will underestimate the loss. Country risk is also included in counterparty risk. There is a distinction between country risk in the narrow and broad senses. Country risk in the narrow sense equates to transfer risk, which results not from the business partner itself, but instead is due to that partner's location abroad. Country risk in the broad sense is the risk that countries or governments will be unable to (fully) meet their contractual obligations in respect of receivables.

In terms of volume limitation, the Deka Group makes a distinction in counterparty risk between position risk, advance performance risk and potential future exposure (PFE). Position risk comprises borrower and issuer risk, as well as replacement risk and open position risk. Borrower risk is the risk that outstanding loan payment obligations to the Deka Group will not be paid or will not be paid in a timely manner. Similarly, issuer risk is the risk of losses caused by default on the part of issuers of debt or equity securities, underlyings of derivative instruments, or fund units. Replacement risk is the risk that if a business partner were to default, a replacement transaction would have to be conducted at less favourable market conditions. Open position risk (performance disruption) results if a delay occurs in the performance of a contractually agreed obligation by a business partner. Advance performance risk represents the risk that a business partner will not pay the contractually agreed consideration after advance performance has been rendered by the Deka Group. Potential future exposure (PFE) risk comprises the risk arising from potential market price fluctuations in relation to repo loan transactions, synthetic lending transactions and other derivatives transactions.

Market price risk

Market price risk describes the potential financial loss from future market fluctuations over a fixed time horizon and hence includes interest rate risk (including credit spread risk), currency risk and share price risk. Option risks are included in the above risks.

General interest rate risks result from changes in currency-specific swap curves, with different fixed-rate periods having an effect as well. These risks also include volatility risk in interest rate derivatives and options (cap/floor and swaptions).

Credit spread risks depend on changes in the issuer-specific premiums on the reference curves. These premiums depend primarily on the creditworthiness of individual issuers or sectors. Premiums for individual issues (residual risks) are also relevant.

Share price risks (including real estate fund risks) are identified as risk factors via the individual shares, indices or funds and are influenced by risks from share or index volatility. The associated option risks or volatility risks are also taken into account here. Currency risks reflect changes in exchange rates.

The process for identifying and quantifying these risks does not differentiate between the trading book and banking book; the same procedures are applied for all DekaBank portfolios, irrespective of the portfolio type. In addition, market price risks are calculated taking into account guarantees that the Deka Group has provided for individual investment funds and are subject to a corresponding economic capital allocation.

Liquidity risk
In terms of liquidity risk, the Deka Group makes a distinction between insolvency risk (liquidity risk in the stricter sense), liquidity maturity transformation risk and market liquidity risk.

Insolvency risk describes the risk that the Deka Group will be unable to meet its current and future payment obligations in a timely manner because liabilities exceed the available liquid funds.

Liquidity maturity transformation risk describes the risk that arises from a change in DekaBank's own refinancing curve in the event of imbalances in the liquidity-related maturity structure.

Market liquidity risk is understood as the risk that transactions cannot be settled or closed out, or can only be settled or closed out at a loss, due to inadequate market depth or because of market disruptions.

Operational risk
Operational risk means the risk of loss caused by the inadequacy or failure of internal processes, people and systems or by external events, including legal risks.

Business risk
Business risk concerns adverse variances from plan that result from changes in customer behaviour, competitive conditions or the general economic and legal framework. The Deka Group considers all factors that have an unexpected negative impact on profit as a result of volume and margin changes, and are not attributable to any other type of risk, to be material.

Reputational risk
Reputational risk describes the danger that developments and loss events that have occurred in connection with other types of risk may have a negative impact on the external image of the Deka Group, thereby diminishing the trust that customers, business and sales partners, rating agencies or the media have in the Bank's competence. This can lead to additional losses, declining revenue, lower liquidity levels or a lower enterprise value. In view of this, reputational risks are not seen as a separate type of risk, but rather as a component of, or as factors that increase, business and liquidity risk.

Given this definition, the management of reputational risks depends on the context of the risk type involved. For instance, when conducting the self-assessment of operational risks, a systematic determination and qualitative assessment of reputational risks resulting from an OR loss event are also performed. Where counterparty risk is concerned, the Deka Group uses appropriate counterparty risk principles, a blacklist and appropriate assessment as part of the credit approval process. A sustainability filter is also applied in the context of counterparty and market price risks. Finally, in the case of business risk, the risk of lower commission due to the materialisation of reputational risks is taken into account. In addition to using these risk type-specific tools, the Deka Group quantifies the impact of reputational damage across all risk types as part of the macroeconomic stress tests. In terms of liquidity risk, which is managed separately, the negative effects of potential reputational damage on the Deka Group's liquidity position are taken into account as part of the stressed funding matrix.

Model risk
Model risks are not regarded as a separate risk type at the Deka Group, but are viewed in conjunction with the individual risk and valuation models. Model risks arising from errors during the implementation, use or application of valuation or risk models, or from the incorrect choice of parameters for these models, are treated as a sub-category of operational risk. Model risks are incorporated directly into the Deka Group's risk-bearing capacity by developing and assessing corresponding scenarios as part of the self-assessment process.

Model risk also describes the risk of potential losses arising as a result of the deliberate selection, specification, choice of parameters, calibration or use of models, and that as a consequence could lead to uncertainty in valuation or, where relevant, to their being insufficiently taken into account in risk-bearing capacity.

Model risks in relation to valuation models are directly recognised by creating appropriate provisions for models under liabilities. By contrast, model uncertainties arising from the specifications of risk models are viewed in conjunction with the respective risk type and specifically examined using detailed validation exercises. If necessary, a buffer is created for model uncertainties as part of the annual risk capital planning process; this reserved internal capital will consequently no longer be available for allocation.

Further types of risk

The Deka Group defines shareholding risk as the risk of financial loss due to impairment of the portfolio of equity investments, insofar as they are not consolidated in the balance sheet and therefore already included under other types of risk. Internal capital is set aside for shareholding risk. Currently, however, this risk has only a minor influence on the Group's risk-bearing capacity.

Pension risk comprises potential losses from pension benefits payable that are not already covered by the provisions recognised for pensions. If material, losses due to guarantee obligations from pension commitments are calculated using appropriate assumptions when determining market price risk or counterparty risk and taken into account as a deduction from internal capital.

Other non-financial risks identified during the risk inventory are covered by superordinate risk categories. These include, for instance, conduct risk and tax risk, which are dealt with especially within the scope of operational risk. Qualitative risk tolerance rules also exist for each of these risks.

Risk concentrations

Risk concentrations describe those risks arising primarily from an uneven distribution of business partner relationships or an uneven sensitivity of the portfolio in relation to major risk factors which could subsequently lead to significant economic losses for the Deka Group.

Risk concentrations can occur both within the major risk types (intra-risk concentrations) as well as across different significant types of risk (inter-risk concentrations). These are a focus of risk management and monitoring in terms of tools looking at specific types of risk as well as those that apply across risk types.

Division-specific risk profiles

The Deka Group's business activities are organised into five business divisions. Asset Management Securities, Asset Management Real Estate, Asset Management Services, Capital Markets and Financing. In principle, this structure has a diversifying effect on business activities and the resulting risks for the overall portfolio. However, it is also associated in part with the pooling of certain business activities, resulting in different risk profiles in the individual divisions.

Asset Management Securities business division

Because of its focus on the active management of securities funds and investment solutions and services, this division principally generates operational and business risks for the Deka Group. These may be exacerbated by reputational risks in connection with the "Deka" brand or other Deka Group brands. In addition, managed guarantee products create counterparty and market price risks for the Deka Group. The division also faces shareholding risks.

Asset Management Real Estate business division

As with Asset Management Securities, the principal operational and business risks in this business division arise from active fund management. To a small extent, market price and counterparty risks also arise for the division from real estate funds in the Group's own investment portfolio. The division also faces shareholding risks.

Asset Management Services business division

This business division, too, principally generates operational and business risks for the Deka Group. These result from the provision of banking services for asset management.

Counterparty and market price risks also arise to a small degree from the operations of S Broker, which is included in this division.

Capital Markets business division

Customer-led business activity in the Capital Markets business division gives rise in particular to counterparty and market price risks. These arise primarily from currency, securities lending and securities repurchase transactions, from trading in financial instruments with financial institutions, savings banks, funds and companies, and in relation to DekaBank's strategic investments. In relation to the division's liquidity investments, credit spread risks and, to a lesser extent, general interest rate risks, share price risks and currency risks arise in relation to the market price risk in the strategic investments unit. Operational and business risks also arise. As the central securities and collateral platform in the association, the Deka Group generates economies of scale and scope. This results especially in concentrations with increased gross risk in relation to individual major banks, market makers that act for the Deka Group and central counterparties. Risk concentrations also exist in relation to individual Landesbanks as association partners. The collateral in securities lending transactions can also give rise to risk concentrations in collateral, which are limited by the rules in the Collateral Policy.

Financing business division

The business activities of the Financing business division (essentially the financing of savings banks, infrastructure, and transport, as well as ECA-backed financing and the financing of commercial real estate) create corresponding focal points, primarily in counterparty risk. In accordance with the business model, this also leads to regional risk concentrations in Germany, as well sector-based risk concentrations in relation to the financial sector. Real estate financing usually involves individual loans with a different regional focus. The division also faces shareholding risks.

Treasury

The Treasury corporate centre's various functions, especially management of the liquidity reserve, give rise to credit and market price risks. Given the strategic focus, risk is concentrated on the public sector and domestic counterparties. Market price risk chiefly involves spread risks. Interest rate risks, currency risks and share price risks arise to a limited extent. Operational risks also exist to a limited extent.

Risk management instruments covering all risk types

The Deka Group uses a variety of tools to manage the risks and risk concentrations resulting from its business activities and thereby continuously ensure capital and liquidity adequacy. The Deka Group distinguishes here between tools that apply to all risk types at the level of strategic requirements and risk-specific tools for operational management, which are described in the sections covering the individual risks. The Deka Group essentially uses three tools for overall management and monitoring of the risks with the aim of ensuring capital adequacy: the risk inventory, risk and capital planning as well as risk-bearing capacity (including stress testing), and capital allocation. Key performance indicators are integrated into both the recovery plan and the remuneration system. Liquidity risk management, which aims to ensure the Deka Group can meet its payment obligations at all times, forms another management level to complement economic risk-bearing capacity. Like the latter, it is based on the results of the risk inventory and integrated with the recovery plan and remuneration system.

Risk inventory

The Deka Group determines and assesses its overall risk profile using a risk inventory that is performed on both a regular and an ad hoc basis. The central objective of the risk inventory process is to analyse, determine and assess the materiality of the individual risk types in a transparent manner, taking into account the risk drivers and risk concentrations resulting from the business model. The assessment has further implications for backing risks with capital, for the holding of liquidity, and for validation. In addition, the inclusion of the companies to be considered in the risk inventory is examined. The risk inventory is the starting point for the analysis of risk-bearing capacity and, together with the risk strategy, forms the basis for the design of further risk management tools. It is divided into a preliminary analysis, a review of the risk universe for relevance and materiality to the Deka Group and the individual business divisions, and preparation of the results in a report and risk directory. In addition, major risk issues for the Deka Group are discussed each month by the MKR.

Risk and capital planning

The risk-bearing capacity of the Deka Group is determined both in terms of the current situation and for the next three budget years. In economic risk and capital planning, the risk-bearing capacity is calculated for each budget year as part of medium-term business planning based on forecast business activity and associated risks as well as planned internal capital. Based on this, DekaBank's Board of Management sets the risk appetite for operational activities and the allocation of capital to the individual risk types and business divisions. This process also allows potential risk concentrations to be effectively addressed at an early stage. Any adjustments needed during the year are undertaken when recommended by the MKR and adopted by a resolution of the Board of Management.

Risk-bearing capacity and capital allocation

As a basic principle, internal capital is used to determine the maximum level of risk that can be incurred (impacting the income statement), taking into account risk concentrations. Risk capacity is analysed monthly. In the course of the risk-bearing capacity analysis, the risk capacity (in the form of internal capital) and the current risk level are determined, compliance with the guidelines and limits is monitored and current results are compared to plan. The Deka Group's total risk, as examined in the risk-bearing capacity analysis, includes as a minimum all material risk types with an impact on the income statement, and is determined by adding these together. Diversification effects between individual types of risk are not taken into account as part of this process. The total risk of the Deka Group is measured as an economic capital amount that is highly likely to be sufficient to cover the losses from all significant risk positions at any time within one year.

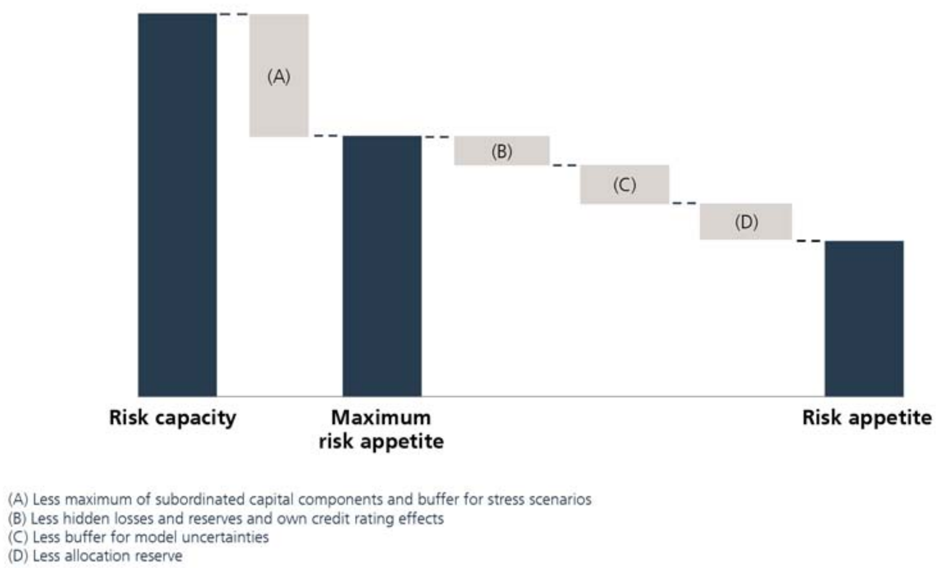
DekaBank uses the value-at-risk approach (VaR) in order to quantify individual risks on a uniform basis and to aggregate them as an indicator for overall risk. The calculation of VaR for a one-year holding period is made for internal management purposes with a confidence level of 99.9%. This level is derived from the business model with reference to an S&P rating at the level of a stand-alone credit profile of "a–".

The total risk of the Deka Group that is derived from the individual types of risk is compared to the Group's internal capital available to offset losses. Internal capital, or risk capacity, consists mainly of equity capital in accordance with IFRS and earnings components and positions with a hybrid capital nature (subordinated capital), adjusted using amounts to correct for specific capital components, such as intangible assets or risks arising from pension obligations. This internal capital is available – in the sense of a formal total risk limit – to safeguard risk-bearing capacity.

In order to reflect extreme market developments and turbulence within the risk-bearing capacity analysis and ensure that risk-bearing capacity is maintained at all times, a capital buffer derived from the risk capacity is explicitly reserved for stress scenarios. This corresponds at a minimum to the level of subordinated capital components, including Additional Tier 1 capital. The maximum risk appetite, which is the result of risk capacity less the capital buffer for stress scenarios, represents the primary strategic management parameter.

Taking into account other deductions (for example, a buffer for model uncertainties in relation to the risk models used) as well as an allocation reserve, this results in the risk appetite set by the Board of Management, which serves as the primary operational control parameter for the allocation of risk capital. In addition to the Group level analysis, risk is also limited by business division (including the Treasury corporate centre) and risk type (including shareholding risk) in the form of allocated risk capital.

Risk capacity and risk appetite *(Fig. 18)*



The utilisation ratios for risk capacity, the maximum risk appetite and the allocated risk capital in the form of risk appetite may not exceed 100%. For the utilisation of the maximum risk appetite, a warning threshold of 90% has also been established.

The results of the risk-bearing capacity analysis and the utilisation levels for the specified allocations are determined monthly and reported to the Board of Management. The Risk and Credit Committee and the Administrative Board are informed on a quarterly basis.

Stress tests and scenario analyses

Economic risk-bearing capacity is regularly assessed by way of macroeconomic stress tests, which cover all types of risk and enable an estimate to be made of how risk capacity would be affected by extreme market developments. Specific scenario analyses are also carried out for all material risk types. Macroeconomic stress tests and risk type-specific scenario analyses enable action areas to be identified at an early stage as soon as crisis situations emerge.

In the stress tests performed across all risk types, extraordinary but nonetheless plausible scenarios are examined. These cover historical scenarios, such as the crisis on the financial markets, hypothetical stress situations, such as the default of important individual counterparties, and institution-specific stress situations. Reputational risks are also systematically included in the stress tests. Furthermore, the Deka Group also performs reverse stress tests, examining specific manifestations of scenarios that would lead to the risk capacity being reached in the specific context of the Deka Group's business model, taking into account the associated risk concentrations. When needed, the scenarios are supplemented with relevant ad hoc analyses.

The effects on risk-bearing capacity of the various all-risk stress scenarios are quantified for one year after the underlying date of the stress test. This includes both the scenario-specific determination of risk capacity and the overall risk position. These key figures are calculated in a two-step process. In step one, relevant risk drivers and risk factors are determined on the basis of macroeconomic and, where applicable, scenario-specific parameters. In step two, the figures are then calculated on this basis. The same risk exposures are used to determine the overall risk position as are used to evaluate current risks.

Calculations for risk type-specific scenarios also indicate the sensitivity of risk exposures in isolation with respect to different relevant risk drivers.

The results of the all-risk and risk type-specific stress tests are determined quarterly, assessed by the Stress Testing Committee and reported to the Board of Management, the Risk and Credit Committee, and the Administrative Board.

The regular annual reviews of the scenarios performed across all risk types were carried out in the fourth quarter of 2018. In general, it was found that the scenarios examined continue to provide an appropriate reflection of all risks relevant to the Deka Group. The stress scenarios were updated, fundamentally revising them and tightening them up in the light of current global economic developments. The description and choice of parameters for the hypothetical and institution-specific stress scenarios were adjusted accordingly.

Reporting

Appropriate and high-quality aggregation of risk data and reporting based on this provide the foundations for effectively monitoring and managing risk appetite within the framework of the risk strategy. Key instruments for risk reporting include the monthly reporting on the economic risk situation and on the key regulatory liquidity ratios, and the quarterly risk report in accordance with MaRisk, which provides the Board of Management and the Administrative Board with a comprehensive overview of risk-bearing capacity and the significant types of risk. The Board of Management also receives more extensive reports for individual risk types, which contain key information on the current risk situation.

Risk concentrations in relation to individual counterparties (cluster risks and analysis of shadow banking entities) are reported on monthly to the Board of Management and the key risk committees as part of the report on the economic risk situation. In addition, a detailed analysis of all individual counterparties classified as clusters and the associated segment concentrations in comparison to the guidelines set by the credit risk strategy is conducted on a quarterly basis as part of the quarterly risk report. If necessary, adjustments are made to the number and volume of the relevant counterparties.

Further overall reports also include quarterly reporting on macroeconomic stress tests, which examine key indicators material to the risk appetite under alternative scenario conditions. In this respect, stress tests perform a crucial early warning function.

Besides these overall reports, there are also corresponding reports for every type of operational limit that is set. These reports are used to monitor compliance with the respective guidelines on a daily basis. Any breach is immediately brought to the attention of the authorised decision maker – and in the event of material breaches, also the Board of Management.

Overall risk position in the 2018 financial year

During the reporting year, the models employed by the Deka Group for economic risk management continued to reflect the corporate and market situation in an appropriate and timely manner. After largely stable market developments with little fluctuation in the first half of the year, which was reflected in no overall change to total risk, market uncertainty and volatility rose significantly in the second half of the year. Growing economic worries, partly due to geopolitical tensions, also led to a noticeable widening of spreads.

The agreement reached on 14 November 2018 regarding the UK's exit from the European Union, which followed protracted negotiations, had no significant impact on business developments at the Deka Group in the short term. However, Brexit could in future adversely affect the stability of the financial markets and result in lower economic growth rates. Given that the British parliament rejected the Brexit agreement on 15 January 2019, there also remains the risk of a disorderly ("No Deal") Brexit.

The Deka Group has tasked a group of experts with examining the current and possible future impact on the Deka Group of the UK's exit from the EU. This includes fundamental legal questions such as the changes that may need to be made to established contracts with counterparties. The group is also systematically exploring possible long-term impacts on market infrastructure, such as the effect of moving clearing activities from LCH London to EUREX in Frankfurt. Full account of Brexit-related market movements and associated risks is also being taken in risk management, in particular as regards the modelling of stress scenarios. Further developments will therefore be closely watched.

Utilisation of risk capacity and of the maximum risk appetite remained at non-critical levels throughout the reporting period. The Deka Group also maintained ample liquidity throughout.

The Deka Group's total risk exposure (value-at-risk, confidence level 99.9%, holding period of one year) at the 2018 reporting date was €2,492m, an increase of €457m on the 2017 reporting date (€2,035m). The increase was predominantly attributable to substantial rises in counterparty and market price risk. Business and operational risk were also up year-on-year. Only shareholding risk recorded a slight decline.

Despite the increased risk level, utilisation of allocated risk capital was non-critical both at Deka Group level and in all business divisions. The risk appetite of €3,700m (unchanged since the end of 2017) was 67.4% utilised as at the 2018 reporting date (year-end 2017: 55.0%).

While total risk increased year-on-year, risk capacity changed only marginally at €5,920m (year-end 2017: €5,912m). There were positive effects especially from the increase in retained earnings through partial retention of the annual profit for 2017, the movement in the correction item for the own credit quality effect and a smaller deduction for risks on pension obligations. However, these were almost fully offset by negative effects from maturing subordinated liabilities, a reduction in the correction item for hidden liabilities/reserves from securities in the banking book and an increased deduction for deferred tax assets. Utilisation of risk capacity increased to 42.1% due to the rise in total risk (year-end 2017: 34.4%), but remained at a non-critical level. Utilisation of the maximum risk appetite increased to 56.4% with an unchanged capital buffer for stress scenarios (year-end 2017: 46.1%). The calculation of the maximum risk appetite does not incorporate subordinated capital (including AT1 capital and perpetuals).

The stress scenarios that are run on a regular basis across all risk types also confirmed that risk capacity was not fully utilised in any scenario as at 31 December. In the most commonly considered scenarios, risk capacity utilisation was considerably below the early warning threshold of 80%, both during the reporting period and at the reporting date. Exceptions were the scenarios involving a eurozone debt crisis and the collapse of systemically important banks. Even in these two scenarios, risk capacity utilisation remained below 100%.

Change in Deka Group risk over the course of the year *€m (Fig. 19)*

[1] The real estate fund risk has been included in the market price risk since 1 January 2018.

Counterparty risk

Strategic framework and responsibilities

The credit risk strategy stipulates the parameters for all Deka Group transactions that involve counterparty risk. It serves in particular as the foundation for the Group's counterparty risk principles for loans as defined by section 19 (1) of the KWG and describes the business divisions and segments that are the focus of lending activities – including the specific risk determinants and minimum standards for new business. Furthermore, the credit risk strategy serves to distinguish between the individual risk segments and governs the handling of intra-risk concentrations, cluster risks and exposures to shadow banking entities under the EBA guidelines. All lending decisions that deviate from the credit risk strategy are classified as significant and must be reported in the credit risk report in accordance with MaRisk.

The credit risk strategy applies to all organisational units of the Deka Group. The strategy is specified by the Board of Management, reviewed at least once a year and discussed with the Administrative Board. Counterparty risks are monitored and managed in accordance with standard principles, regardless of whether the risks stem from trading or non-trading transactions.

In the context of risk-bearing capacity, counterparty risks are limited by allocating risk capital (risk appetite) both overall and at business division level. For individual counterparties, risk is restricted using a limit system based on factors such as creditworthiness, collateral, duration and country and sector considerations. Management and monitoring of risk concentrations (cluster risks and risks from exposures to shadow banking entities) also takes place at individual counterparty level. In addition, strict lending standards apply depending on the risk segment. These concern, for instance, lending structure and adequate risk sharing by the borrower. In addition, a blacklist is used in line with the credit risk strategy to avoid undesirable lending business that could involve reputational risks or an increased level of risk, or which does not meet the high sustainability requirements.

In accordance with MaRisk, there must be a clear functional separation in the lending business between the "front office" and the "back office". The responsibilities performed by the "front office" particularly include monitoring risks at borrower and portfolio level, reviewing specific items of collateral, early risk identification (administrative office), managing troubled loans and non-performing loans and making decisions regarding loan-loss provisioning for major exposures. Responsibility for applying risk classification procedures, and for establishing, reviewing and monitoring those procedures is classified as a front office function, as is reporting.

Authority levels for lending decisions are based on the net total limit and the gross limit or gross amount. The approval of the Board of Management – and potentially the additional consent of the Risk and Credit Committee – may be necessary, depending on the amount and the rating limits.

The Management Committee for Assets and Liabilities (*Managementkomitee Aktiv-Passiv* – MKAP) and the Risk Management Committee (*Managementkomitee Risiko* – MKR) are responsible for strategically managing counterparty risks and their risk concentrations across all risk types. A number of sub-committees have been assigned to the MKR to deal with counterparty risk. The Rating Committee regularly analyses and assesses the internal rating procedures employed for measuring risk and, where relevant, their inclusion in the pooling system developed in joint projects with Rating Service Unit GmbH (RSU) and S-Rating und Risikosysteme GmbH (SR). The Monitoring Committee is responsible for regularly analysing and discussing matters in connection with the methods and procedures employed for early risk identification as well as for monitoring and managing exposures with increased counterparty risk (troubled loans and on the watch list). The duties of the Risk Provisioning Committee include regularly analysing and discussing matters in connection with the planning, monitoring and management of risk provisions for loan losses, and also monitoring and managing defaulted exposures (restructuring and liquidation cases) in the lending business as well as in the securities portfolios not recognised at fair value through profit or loss.

Responsibilities for the assessment and monitoring of country risks are consolidated in the Country Risk Committee. The committee discusses country ratings on both a regular and ad hoc basis. It also defines country limits, identifies countries to be excluded (blacklist for high-risk countries) and determines measures to reduce overruns of country limits as well as other risk-reducing measures.

Focus, structure and degree of risk associated with business activities
Counterparty risks are incurred both in the individual business divisions and the Treasury corporate centre.

In the Capital Markets business division, the currency, securities lending, repurchase and derivative transactions entered into give rise particularly to counterparty and issuer risks, as does trading in financial instruments in all asset classes. When supporting investment funds and savings banks with the provision and management of liquidity, the division consciously exposes itself to risk concentrations in relation to savings banks, selected capital market participants and central counterparties.

In the Treasury corporate centre, counterparty risks arise mainly from the management of Group-wide liquidity reserves. As a result of the business model, Treasury is exposed particularly to risk concentrations in respect of public authorities and, from a regional perspective, in respect of domestic counterparties.

In the Financing business division, counterparty risk arises from infrastructure, transport and export finance, and property finance. The Financing business division also includes business with domestic savings banks as well as financing of the domestic public sector. Due to the limited volume of financing in the division in relation to the Deka Group’s total loan volume, there are no risk concentrations in these areas. In terms of countries, risks are concentrated on Germany due to the Group’s close involvement in the savings banks association and its transactions with the domestic public sector. In addition, the Deka Group’s ownership structure and its function in the savings bank association lead to a sector concentration on financial institutions.

In the Asset Management Real Estate business division, counterparty risk is incurred only to a limited extent in connection with real estate fund units in the Deka Group’s own investment portfolio.

In the Asset Management Securities business division, counterparty risk for the Deka Group arises predominantly from contractually binding commitments made in connection with guarantee funds and pension products.

In the Asset Management Services business division, counterparty risk arises primarily from lending business with retail customers conducted by S Broker AG & Co. KG. The retail customer lending business of DekaBank Deutsche Girozentrale Luxembourg S.A. was fully wound down over the course of the year. Counterparty risk also arises from the proprietary investments of the two companies S Broker AG & Co. KG and DekaBank Deutsche Girozentrale Luxembourg S.A. No risk concentrations exist, as the volume of retail customer lending business in the Deka Group is small relative to overall lending volumes.

Management and limit-setting

The Deka Group uses different tools to manage its counterparty risk: overall analysis at the total portfolio level and a multi-level system of volume-based limits.

Portfolio model

The starting point for the strategic analysis of counterparty risk is the allocation of capital, which is derived from the Deka Group's risk and capital planning. It is the foundation for the limitation and monthly monitoring of counterparty risk at total portfolio level and at the level of individual business divisions, including the Treasury corporate centre. The allocation is quantified based on the Deka Group's credit portfolio model, which is used to determine the portfolio's risk of loss in the form of a credit value-at-risk (CVaR) metric for a one-year holding period and at a confidence level of 99.9%, in line with DekaBank's target rating. Risk concentrations are taken into account directly through this model: portfolios that have a strong concentration on individual groups of counterparties, regions or sectors involve a higher economic capital commitment than those that are more diversified. The individual risk ratios are reviewed on a monthly basis to provide a foundation for overall management decisions.

Operating management limits

The key instrument for daily operational management of counterparty risk is a system of fixed, complementary volume-based limits. In light of the concentration on specific groups of counterparties, regions and sectors that results from the Group's business model, the limitation of both unsecured volume (net limitation) and the total volume (gross limitation) plays a central role in this process. The amount of the limits is primarily oriented towards the internal rating of the corresponding counterparties. In order to limit concentration, additional targets have been set for the maximum permitted amount per counterparty (gross limit €3.5bn/net total limit €1.6bn). Particularly important counterparties from a business policy perspective (clusters) are also subject to additional reporting above a specific amount. Separate limits apply in the case of exposures to shadow banking entities. The Deka Group distinguishes between transparent shadow banking entities (principal approach) and less transparent shadow banking entities (fallback approach). Further minimum requirements for the quality of collateral received apply to particularly significant repo lending transactions. These requirements are contained in the collateral policy. Furthermore, liquidation risks associated with repo lending transactions are further limited by the application of supplementary limits in order to take into account potential fluctuations in the value of the underlying securities.

Loans that involve specific project, sustainability or reputational risks are not entered into. Detailed risk determinants and minimum standards have also been established for the individual financing categories.

The explicit limitation of country risks serves to effectively limit positions in countries with elevated risk. Only the risk position relating to Germany is excluded from this process of limit-setting.

In retail customer lending business, counterparty risks are limited by the provision of collateral.

Quantification of counterparty risk

Market prices are always used to determine gross counterparty risk. In the case of products for which there is no observable market value, the net present value is used. The outstanding receivable amount is used for advance performance risk and open items. The adjusted gross position is then calculated by deducting specific insolvency-proof collateral. The overall net position is arrived at by deducting additional collateral and positions that reduce risk, with valuation of collateral following the internal regulations that apply in each case.

In order to achieve consistency between the strategy system, management tools and risk reporting, the concepts of volume used in risk reporting – gross or net loan volume – are closely aligned with the metrics used for limit-setting, namely adjusted gross position and overall net position. Gross and net loan volumes referred to below relate to the adjusted figures.

The assessment of counterparty risks for individual borrowers includes the use of internal rating systems. Borrowers are assigned to an internal rating class with corresponding estimates of the probability of default (PD).

The internal rating systems currently used are tailored to different risk segments, including corporates, banks, governments, funds and specialised financing. The rating systems include conventional scorecard models and models in which the probability of default is estimated using simulated macro and micro scenarios for risk drivers and expected cash flows. The regulator has approved the rating systems for the foundation internal ratings-based approach (IRBA).

When measuring the transfer risk on payment obligations that are denominated in a foreign currency from the borrower's perspective, the borrower rating is influenced by the country rating.

All of the rating modules in use are calibrated to a one-year probability of default. The rating classes are uniformly assigned according to the probability of default based on the master scale of the German Savings Bank and Giro Association (*Deutsche Sparkassen- und Giroverband* – DSGV). This scale serves as a standard reference for a differentiated creditworthiness assessment. The DSGV master scale provides for a total of 21 rating classes for non-defaulting borrowers and three for defaulting borrowers.

Counterparty risks from a portfolio perspective are assessed with the help of an internally developed credit portfolio model. The portfolio model is largely based on a credit metrics approach. In addition to default risks, the risks arising from a change in ratings are also taken into consideration. The probability distribution for changes in the value of the loan portfolio is generated using a Monte Carlo simulation.

The CVaR and, for information purposes, the expected shortfall (ES) are key figures for management decisions and are both determined with a holding period of 250 trading days and a confidence level of 99.9%. Risk concentrations are taken into account by considering the dependency structure of risk factors. In particular, the modelling approach selected considers dependencies between crisis events. In addition to the CVaR from the credit portfolio model, the CVaR for certain guarantee funds and fund units in the Group's own investment portfolio are also taken into account, along with the expected shortfall (ES).

The standard risk costs incorporated into the calculation of the expected return on equity are based on an expected-loss approach and relate to the likelihood of default, the loss rate and the maturity of the transactions. The cost of equity is determined using risk amounts differentiated by individual transaction and corresponding sector and regional allocations. Risk concentrations are included for individual counterparties (clusters), regions and industries by taking into account the cost of equity in the structuring of loan terms.

Management and monitoring of counterparty risks

The Deka Group's counterparty risk, as determined in this way, is directly compared with allocated risk capital. Credit risks are thus monitored based on a redistribution of the CVaR to individual transactions and reaggregation to the business divisions.

Daily management and monitoring of counterparty risk uses a volume-based limitation of the net position and the adjusted gross position.

As a supplement to its volume-based limits, the Deka Group uses thresholds for risk concentrations in connection with individual counterparties, known as clusters. This entails further precautionary procedures for large exposures and monitoring routines for risk concentrations as appropriate. Thresholds for sectors are not meaningful due to the Deka Group's specific business model, and are thus not taken into account.

The Risk Control corporate centre monitors the limits using a centralised limit-monitoring system at both the borrower-unit level and the borrower level. A comprehensive and market-based early warning system ensures that the individual counterparties subject to limits are monitored so that, in the event of extraordinary developments, countermeasures can be taken at an early stage. At a portfolio level, an analysis of the most significant borrowers and sectors is also carried out, based on CVaR. Maximum country limits are derived from a limit matrix, which is calculated based on a foreign currency (FC) country rating and the gross domestic product. Individual country limits within the limit matrix are approved by the Country Risk Committee. The Risk Control corporate centre monitors compliance with the respective country limits. Overruns are reported immediately to the members of the Country Risk Committee and to the Capital Markets Credit Risk Management unit. This unit acts as the central administrative office for country limits. An analysis of the most significant countries or regions is also carried out from a portfolio perspective, based on CVaR.

In addition to requirements concerning the liquidity of the securities, the additional investment criteria for securities portfolios in the Treasury corporate centre include, in particular, stipulations regarding issuers, credit rating and portfolio diversification. Compliance with these rules is monitored daily by the Risk Management unit, which is independent of trading operations. Any breaches are reported immediately. In addition, reporting takes place monthly to the MKR and MKAP. This includes an analysis of the holdings in the liquidity reserve portfolios and the portfolio structure.

The Deka Group has issued extensive processing and valuation guidelines for collateral obtained in lending and trading transactions. The procedures for verifying valuation of collateral received in the course of lending business, including guarantees, sureties, charges on commercial and residential property, registered liens and the assignment of receivables, are applied on an annual basis. Valuation of collateral and of any discounts applied to it is primarily based on the creditworthiness of the party providing the guarantee, or in the case of asset collateral, on the market value, fair value or lending value of the financed property.

Management and monitoring activities also focus on financial collateral provided in the form of securities and obtained as part of repo lending transactions. These comprise by far the largest share of the collateral portfolio as compared to the lending business.

The Group's collateral policy defines the eligibility criteria for securities borrowed by counterparties or received as collateral in repo lending transactions. In addition, risk concentrations are restricted using category-specific concentration limits for equities and bonds, as well as a concentration limit (volume restriction) for each counterparty that applies across all categories.

The Capital Markets business division is responsible for compliance with the requirements of the collateral policy. It is supported operationally in this regard by the Capital Markets Collateral Management unit. A review independent of trading is performed daily by the Risk Management unit. Market- and counterparty-specific matters that could significantly affect the risk profile or profitability of the Capital Markets business division are analysed in the Risk Talk, which takes place every two weeks. In addition, an analysis of collateral is reported to the MKAP on a monthly basis.

Performance of stress tests

In addition to the macroeconomic stress tests performed across all risk types, additional sensitivity tests are conducted specifically for counterparty risk. Scenarios include, for example, a rating downgrade for public authorities and federal state banks as well as an increase in downgrade probabilities or loss ratios for certain collateral. The results of the stress tests are determined quarterly and reported to the Stress Testing Committee, the Board of Management, the Risk and Credit Committee and the Administrative Board. They therefore enable the Group to identify areas for action as early as possible if crisis situations start to unfold.

Default monitoring

The Monitoring Committee is operationally responsible for monitoring and managing troubled loans and on the watch list. This includes specifying early warning indicators and criteria to allocate exposures to different monitoring levels.

Operational responsibility for monitoring and managing restructuring and liquidation cases lies with the Risk Provisioning Committee. The latter is also responsible for regularly analysing and discussing matters in connection with planning, monitoring and managing loan loss provisions.

DekaBank determines loan loss provisions and provisions for off-balance sheet lending business in accordance with the expected credit loss model under IFRS 9. Details of this methodology can be found in the notes to the consolidated financial statements.

Current risk situation

The counterparty risk determined on the basis of the credit value at risk (CVaR), with a confidence level of 99.9% and a holding period of one year, increased significantly in the reporting year to €1,416m (year-end 2017: €1,115m). Risk capital allocated to counterparty risk stood at €1,905m (year-end 2017: €2,015m). Utilisation of this amount was 74.3% (year-end 2017: 55.3%). The level of risk capacity utilisation therefore remained non-critical. The main reason for the rise in the CVaR was the increase in exposures, which was primarily attributable to higher corporate bond holdings and a promissory note-based transaction to refinance a consumer loan portfolio in the strategic investments unit. Spread widening in the bond market – partly as a result of the termination of the ECB's bond purchase programme – also had an impact in the form of higher migration risks. The increased volume of specialised lending and a rise in the volume of guarantee funds also moderately increased risk. The updated parameters for migration matrices and loss ratios, which were used for the first time from the beginning of 2018, slightly offset the increase in risk.

The risk position of the cluster portfolio is assessed using a redistribution based on expected shortfall. This also resulted in an increase compared to the previous year, as the number of borrower units classed within counterparty clusters rose. Risk concentrations in the ten largest counterparty clusters grew slightly in terms of their absolute amount and share of the overall portfolio. However, risk concentration remained in line with the Deka Group's credit risk strategy.

Gross loan volume increased by €14.5bn from the end of 2017 (€136.8bn) to reach €151.3bn. A large part of the increase was attributable to the financial institutions risk segment, where higher deposits with Deutsche Bundesbank and the increased bond volume (much of which, albeit, involved fully secured transactions by major capital market counterparties) both had an effect. Another reason was the expansion of the repo lending volume with central counterparties. In addition, the higher bond volume led to a higher gross loan volume in the corporates risk segment. The funds risk segment was marked by higher repo volumes and a larger volume of issued loan collateral. Volume in the lending business also exceeded the prior-year figure. This was due to a variety of financing loans for infrastructure, transport, export and real estate, the vast majority of which were secured. In contrast, the reduction in the volume of German federal state-issued bonds reduced risks in the public sector Germany risk segment. The ship portfolio's share of gross loan volume decreased to 0.7% (year-end 2017: 0.9%), partly due to sales. Given the continuing difficult market environment, the ship financing portfolio is still being closely followed and monitored on an ongoing basis.

Gross loan volume *€m (Fig. 20)*

	31 Dec 2018	31 Dec 2017
Financial institutions	84,522	72,527
Savings banks	7,358	7,177
Corporates	12,792	12,260
Public sector International	2,726	2,710
Public sector Germany	7,541	11,255
Transport and export finance	6,192	5,193
Property risks	10,039	8,771
Funds (transactions and units)	16,347	14,502
Other	3,772	2,420
Total	**151,288**	**136,817**

The net loan volume increased by €16.6bn to €71.5bn at year-end 2018 (previous year: €54.9bn). This considerable rise reflected the effect of disclosing transactions with domestic public sector counterparties and counterparties bearing guarantor liability on a net basis for the first time. The rise in volume in the financial institutions risk segment, which was also visible after netting, was primarily due to higher deposits with Deutsche Bundesbank. By contrast, the growth in the volume of collateralised business did not have a material effect due to the deductions made when converting from gross to net loan volume. Here, the netting of lending transactions, particularly given their increase in the funds risk segment, and the even more extensive collateralisation of loans in the transport and export finance and property risk segments, meant that the rise in net loan volume was smaller than that in gross loan volume. Meanwhile, the increase in liquidation risks had the opposite effect.

Net loan volume *€m (Fig. 21)*

	31 Dec 2018	31 Dec 2017
Financial institutions	33,559	24,637
Savings banks	7,064	6,722
Corporates	6,900	6,396
Public sector International	1,469	1,771
Public sector Germany	7,108	2,331
Transport and export finance	820	670
Property risks	2,046	1,695
Funds (transactions and units)	8,810	8,306
Other	3,770	2,400
Total	**71,545**	**54,928**

A substantial portion of the rise in gross loan volume related to the eurozone, owing to the increased level of Bundesbank deposits, the higher repo volume with the central counterparty EUREX, the increase in repo transactions with counterparties in Germany and France, and the higher lending volume in Luxembourg. Gross loan volume in the eurozone rose to 71.8% of total gross loan volume from 70.9% at the end of 2017. The gross loan volume allocated to Germany increased by €6.7bn to €67.5bn. In the eurozone, €17.0bn of the gross loan volume was attributable to counterparties in Luxembourg. Counterparties in France accounted for 6.5% of the gross loan volume, and counterparties in Belgium accounted for 3.8%. At €21.5bn, gross loan volume in EU countries outside the eurozone was higher than at the end of 2017, primarily due to increased volumes of repo lending, bond trading and loans with counterparties in the UK. Due to the Brexit negotiations, however, the country and sovereign limit for the UK is being closely monitored. In the OECD countries outside the European Union, the increase was due in particular to a greater exposure to bonds issued by US counterparties and to secured aircraft and real estate financing in North America. There was also an increase in the volume attributable to financial institutions in Switzerland.

Gross loan volume by region *€m (Fig. 22)*

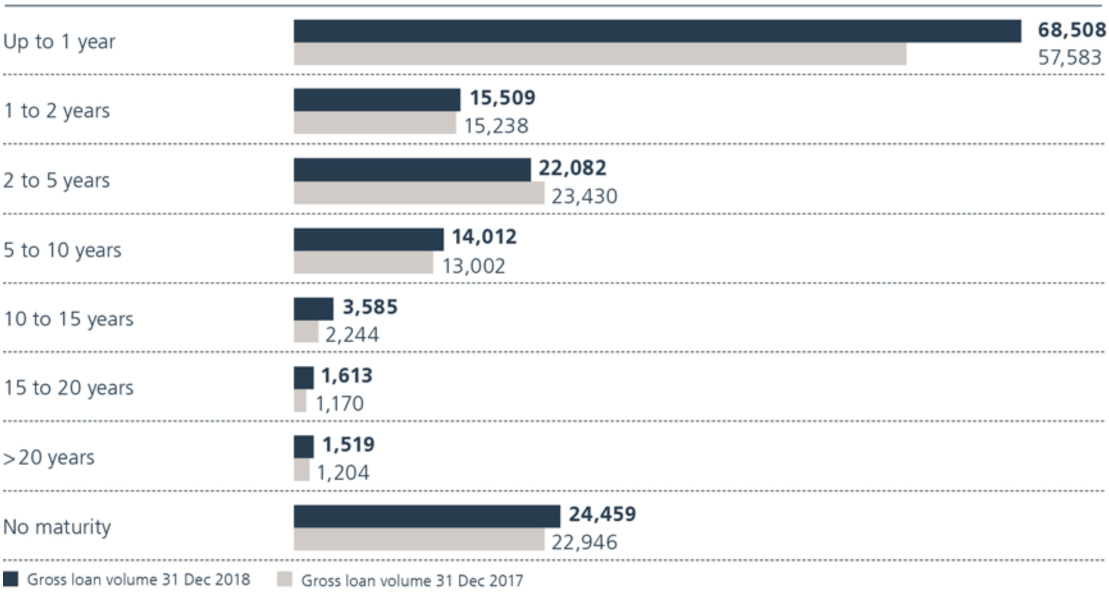
The gross loan volume attributable to borrowers in Italy declined from €1.3bn at the end of 2017 to €1.2bn. The country limit was also substantially reduced in the course of the year. Due to the collateralisation provided by repo lending transactions, the security provided for the bond portfolio using protection buyer CDS and the securing of loans through, for example, ECA guarantees, the net loan volume attributable to borrowers in Turkey, Italy, Spain, the UK and Russia was lower than the gross loan volume.

Gross loan volume by risk segment for selected countries as at 31 December 2018 *€m (Fig. 23)*

	Turkey	Spain	Italy	Great Britain	Russia
Financial institutions	0	1,925	304	15,352	0
Corporates	0	360	160	1,690	0
Public sector International	0	79	221	617	0
Transport and export finance	114	0	205	199	133
Energy and utility infrastructure	0	53	0	0	0
Property risks	0	1	250	2,213	0
Funds (transactions and units)	0	0	0	44	0
Other	0	41	14	123	0
Comprehensive income	**114**	**2,460**	**1,154**	**20,238**	**133**
Change vs. previous year					
Financial institutions	0	–242	–100	–436	0
Corporates	0	–49	50	–24	0
Public sector International	–5	–197	–20	533	0
Transport and export finance	–15	–14	–13	56	–83
Energy and utility infrastructure	0	–2	0	0	0
Property risks	0	–1	–52	102	0
Funds (transactions and units)	0	0	0	–16	0
Other	–14	–1	–25	98	0
Comprehensive income	**–34**	**–506**	**–161**	**311**	**–83**

The gross loan volume remained focused primarily on the short-term segment at the end of 2018. The proportion of transactions with a time to maturity of less than one year was 45.3% (year-end 2017: 42.1%). The proportion of maturities longer than ten years was 4.4%, compared with 3.4% at 31 December 2017. The average legal residual term of gross lending was 2.6 years (year-end 2017: 2.7 years).

Gross loan volume by maturity *€m (Fig. 24)*



There was no significant change in the level of risk concentration in the loan portfolio during the reporting year. As at 31 December 2018, 18.3% (year-end 2017: 18.4%) of total gross loan volume was attributable to borrower units with a gross limit of at least €2.5bn or an overall net limit of at least €1.0bn (counterparty clusters). The number of counterparty clusters rose by 7 to 26. The reason for this was again the change in the risk calculation for transactions with public sector counterparties, as a result of which higher net limits needed to be set. This did not lead to an increase in risk. Of the cluster portfolio, 24.3% related to counterparties in the German public sector, the savings banks and other alliance partners. A total of 15.9% of net loan volume related to counterparty clusters (year-end 2017: 9.4%).

The Deka Group also limits the shadow banking entity portfolio in accordance with EBA requirements. Shadow banking entities include, among others, money market funds, credit funds and inadequately regulated credit institutions. In addition to the overall limits imposed on shadow banking entities, limits are imposed based on the principal and fallback approaches. This does not affect the limits at the level of individual counterparties. As in the previous year, less than 3% of net loan volume as at 31 December 2018 related to shadow banking entities under the principal approach (limit utilisation of total net risk position: 93%) and less than 1% to shadow banking entities under the fallback approach (limit utilisation of total net risk position: 48%). The levels of utilisation are considered acceptable. This view is backed up by the shadow banking entities' average rating of A (principal approach) or AA- (fallback approach) on the DSGV master scale.

Over the past year, the average rating for the gross loan volume deteriorated by one notch to a rating of 3 on the DSGV master scale. The average probability of default as at 31 December 2018 was 15 bps (year-end 2017: 12 bps). The change was due, among other things, to new, largely ECA-backed export financing in Angola and Vietnam with relatively poor ratings. With regard to the net loan volume, a rating improvement by one notch to A– was achieved, partly as a result of the increase in volume with Deutsche Bundesbank and other public sector counterparties with good credit ratings due to the change in the risk calculation. The probability of default went down to 9 bps, compared with 11 bps at the end of 2017. This was a result of the slight improvement in ratings for large Deka funds. 87% of net loan volume remained in the same grouping (determined by rating class) as at the end of 2017. The target rating under the credit risk strategy was achieved for both the gross and net loan volumes.

Net loan volume by risk segment and rating *€m (Fig. 25)*

	Average PD in bps	Average rating 31 Dec 2018	31 Dec 2018	Average PD in bps	Average rating 31 Dec 2017	31 Dec 2017
Financial institutions	5	A+	33,559	7	A	24,637
Savings banks	1	AAA	7,064	1	AAA	6,722
Corporates	12	2	6,900	12	2	6,396
Public sector International	8	A	1,469	5	A+	1,771
Public sector Germany	1	AAA	7,108	1	AAA	2,331
Public infrastructure	16	3	984	19	3	675
Transport and export finance	176	9	820	193	9	670
Energy and utility infrastructure	55	6	2,052	59	6	1,606
Property risks	9	A-	2,046	10	A-	1,695
Retail portfolio	3	AA	733	3	AA	119
Funds (transactions and units)	10	A-	8,810	14	2	8,306
Comprehensive income	**9**	**A-**	**71,545**	**11**	**2**	**54,928**

Market price risk

Strategic framework and responsibilities

The Deka Group's market price risk strategy, based on the Group's overall risk strategy, stipulates parameters for risk management in all organisational units regarding all positions in the trading and banking book that are exposed to market price risk. It sets objectives, priorities and responsibilities for market price risk management and, together with the liquidity risk strategy, governs the business focus of trading activities (trading strategy).

Within the risk management organisation, the Board of Management decides the market price risk limits for the Group as a whole, as well as at the level of the business divisions, including the Treasury corporate centre. The relevant department heads are responsible, in consultation with the head of Risk Control, for reallocating existing limits below the level of the Capital Markets business division and Treasury where appropriate. The allocation of limits reflects both organisational structure and the distinction between the trading and the banking book.

The MKR and MKAP make recommendations with respect to the definition of the framework for the management of strategic market-price risk positions to the Board of Management, which then adopts resolutions accordingly. In its capacity as a sub-committee, the Risk Talk supports the MKR and the Board of Management in relation to the Capital Markets business division's operational processes for managing and monitoring market price risk. To do so, it conducts in-depth analysis on a range of issues relating to market and counterparty risks and makes recommendations and binding decisions on matters that might materially influence the Capital Markets business division's risk profile or profitability. These committees make an important contribution to communication between the departments responsible for the control and monitoring of market price risks.

Execution of transactions and recording exposures are the responsibility of the operating units. In terms of market price risks, they are solely responsible for the implementation of strategic guidelines and operational management within the prescribed risk limits.

Market price risks need to be considered in the Asset Management business divisions, in the Capital Markets business division and in the Treasury corporate centre. Market price risks in the Financing business division are passed on to the Treasury corporate centre.

The Deka Group's investment management companies are generally not subject to any market price risks beyond those associated with the investment funds. However, market price risks can arise for the Deka Group if products are provided with a guarantee. Market price risks from guarantee products are incorporated into the analysis of risk-bearing capacity and attributed to the Asset Management Securities business division.

Focus, structure and degree of risk associated with business activities

With respect to market price risk, the Deka Group's business model focuses primarily on spread risks. To conduct its business, the Group mainly uses established products and markets with adequate market liquidity and market depth due to their international acceptance. No business is conducted involving physical delivery of precious metals and goods. Open risk positions are entered into only within the allocated market price risk limits.

In its function as a securities and collateral platform, the Capital Markets business division offers a carefully coordinated, competitive range of capital market and credit products. Outside the strategic investments unit, proprietary trading not directly linked to customers takes place only for the purposes of managing risks from the customer business or for overall risk management purposes. The primary risks that result from these activities are credit spread risks, as well as interest rate, equity, option and currency risks. Whenever economically justified, risks are covered using hedging instruments. The rules for recognising hedging relationships in the balance sheet do not always correspond with the methods used for internal bank management purposes. It is therefore possible that differences may arise between the economic and accounting hedging relationships.

In the Collateral Trading & Currency unit's repo and securities lending business, there is a direct link with DekaBank's securities portfolios. Customer transactions have a significant influence on the Bank's liquidity base, which is managed centrally by the Treasury corporate centre. Collateralised financing is also conducted as part of customer business. Due to its business model, DekaBank has a surplus supply of securities and collateral that can be invested in customer business to minimise risk. To this end, traditional repo and reverse repo transactions, stock lending transactions and lending substitute transactions are carried out, which combine spots and derivatives.

In bond trading in the Trading & Structuring unit, positions are established in the bonds of public issuers, financial services providers and corporates, among others. The focus here is on market-making for customers. Therefore, long-term positions are generally not entered into. Nevertheless, risks may arise from entering into short-term positions in anticipation of customer orders.

In derivatives trading, the Trading & Structuring unit is responsible for pricing and risk management of linear interest rate derivatives, interest rate options, equity, fund and inflation derivatives, and other types of derivatives. Trading focuses on linear and non-linear interest rate derivatives as well as inflation derivatives, giving rise mainly to interest rate and share price risks as well as associated option risks. Share price risks and associated option risks from equity, fund and strategy derivatives also feature.

Strategic investments predominantly comprise positions for which the refinancing volume has resulted from DekaBank's customer-driven business and is not needed for lending operations. The key risks in this regard are interest rate and credit spread risks.

Management of the Deka Group liquidity reserve is centralised in the Treasury corporate centre. The investment focus of liquidity investments is currently on bonds issued by German federal states, German development banks, German run-off institutions, German *Pfandbriefe*, supranational institutions and investment-grade corporate bonds. These investments primarily give rise to credit spread risks, which are closely monitored and reduced, when needed, through disposals or via credit derivatives. Monitoring fund products provided with guarantees and managing market risk in the banking book involves further market price risks. In the latter case, risk management relates primarily to interest rate, basis and currency risks, with exchange-traded derivatives sometimes also being used.

Interest rate and currency risks that result from liquidity management in Treasury are managed using derivative instruments, whereas the market price risks arising from refinancing and equity-capital management are hedged using internal transactions where possible as well as using external and internal derivatives.

Management and limit-setting

Market price risk is monitored on a daily basis. The basis for this monitoring is a system of operational limits that is consistent with the Group's overall risk-bearing capacity. This system defines limits in line with the business model for the various portfolio levels and risk categories. It also takes into account the focal areas of the portfolio determined by the business model. In addition, limits are set based on operating metrics such as sensitivities. These are primarily used for operational management of the capital markets business in order to monitor adherence to the risk strategies on an ongoing basis. Stop-loss limits are another management tool for limiting losses. In the event that a limit is exceeded, the MKAP formulates recommendations for the Board of Management on mitigation measures, while the MKR is responsible, if required, for recommending measures in relation to risk appetite.

Value-at-Risk (VaR)

VaR is calculated with a confidence level of 99.9% and a holding period of one year when analysing risk-bearing capacity; when determining the utilisation of operating limits, DekaBank calculates VaR for a holding period of ten days and a confidence level of 99.0%.

The operating VaR therefore corresponds to the maximum loss on a position held over a period of ten trading days, with a probability of 99.0%.

VaR key ratios are determined on a daily basis for all relevant risk categories and portfolios and are compared with the associated portfolio-specific limits.

To determine VaR, a sensitivity-based Monte Carlo simulation is used across all portfolios. This simulation ensures that all market price risks are identified in an integrated manner. The selection of risk factors is closely based on business activities and on the focal areas of the portfolio determined by the business model. Issuer-specific curves for spread risk are of particular importance. Appropriate consideration is given to spread risks, using the relevant spread curves, and basis risk.

Sensitivity-based management metrics

The input parameters for this risk model are the sensitivity metrics delta, gamma and vega. These first and second ranking sensitivities express the price sensitivity of financial instruments to changes in underlying risk factors and are used to determine overall risk. They are also available as additional management metrics for risk assessment purposes.

Sensitivity analyses are defined as simple shifts in the different risk factors for interest rate, credit spread, share price and exchange rate movements. The sensitivity analyses are used to support the operational management of the risks from trading and treasury positions.

To calculate share price risk, each share is included as an individual risk factor and considered accordingly when determining risk. The specific interest rate risks (credit spread risks) are calculated on an integrated basis using the sensitivities of the underlying segment-specific or name-specific credit spread curves. There are also residual risks relating to individual issues.

The model ensures that all risk factors associated with the trading strategy are identified, including non-linear risks and credit spread risks. Daily risk measurement is performed for all types of market price risk, both in the trading book and the banking book. This guarantees a comprehensive view of all market price risks, while adequately taking into account concentration and diversification effects by including correlations across all portfolios and risk types.

Market price risks that result from granting guarantees are measured using an approach specifically developed for this purpose and geared towards risk-bearing capacity, which does not take into account diversification effects with regard to other market price risks.

Scenario considerations and stress analyses

The limit system is supplemented with regular market price risk-specific stress tests. Using these tests, the sensitivity of the portfolio is constantly tested with regard to a wide variety of trends in the various risk factors. Once again, the focus is on risks that are particularly relevant, using separate, portfolio-specific analyses.

Market price risk-specific stress tests take place at both overall portfolio level and for the banking book in isolation.

Market price risks are also an important component in the analysis of significant macroeconomic scenarios. The effects of this analysis, which covers all risk types, are investigated on a quarterly basis and serve as an early warning mechanism for the Bank regarding its risk-bearing capacity.

The main components of the portfolio are also addressed as part of this analysis by performing a detailed review of credit spread trends, particularly in the financial sector and among domestic public issuers.

Backtesting of VaR risk ratios and validation

Various steps are taken to test the quality of the VaR forecast, including regular backtesting for various portfolio levels. In this process, the daily results that are theoretically achieved assuming unchanged positions on the basis of the market developments observed on the following day are compared with the forecast value-at-risk figures for the previous day. In addition, dirty backtesting regarding the actual change in value is also carried out, taking trading activities into account. The backtesting findings are also used to enhance the risk model. The results are reported on a quarterly basis. Overall, the backtesting results confirm the suitability of the market price risk measurement at both the bank level and at the level of subordinate organisational units. In addition, the approximation error of the delta-gamma approximation is reviewed on a monthly basis by carrying out a full valuation of the portfolio.

Risk models are validated on both a regular and ad hoc basis, and the results play an important role in assessing whether the models are adequate. Accordingly, any requirements for further development that arise from the validation procedure are then integrated into the process for identifying and quantifying risks. Overall, the validation exercises carried out confirm that the market risk model is appropriate.

Current risk situation

In the context of risk-bearing capacity, market price risk at the Deka Group (value-at-risk, confidence level 99.9%, holding period of one year) as at the reporting date stood at €520m. The increase since the end of 2017 (€382m) was primarily attributable to a larger volume of guarantee products in conjunction with higher equity volatilities of late and a considerable fall in stock markets. An increase in exposures and higher spread volatilities in the Capital Markets business division also contributed significantly to the higher risk level. The increase in risk fell largely on the Capital Markets and Asset Management Securities business divisions, while only minor year-on-year changes were recorded in the other divisions and in the Treasury corporate centre.

With a confidence level of 99% and a holding period of ten days, market price risk (value-at-risk), excluding guarantee risks, stood at €50.6m as at the reporting date (year-end 2017: €43.8m). The increase mainly consisted of spread risk, particularly as a result of the above-mentioned increase in exposures and higher spread volatilities in the Capital Markets business division. Utilisation of the operational management limit at Deka Group level (excluding guarantees) stood at €71m. This represented a utilisation level of 72% and was therefore non-critical. Following the integration of real estate fund risk into market price risk at the beginning of the reporting year, the Asset Management Securities and Asset Management Real Estate business divisions are now also monitored as part of operational market price risk management.

Deka Group value-at-risk excluding guarantee risks[1] (confidence level 99%, holding period ten days) *€m (Fig. 26)*

	31 Dec 2018						
Category	**Asset Management Securities business division**	**Asset Management Real Estate business division**	**Asset Management Services business division**	**Capital Markets business division**	**Treasury**	**Deka-Group excluding guarantees**	Change in risk
Interest rate risk	0.1	0.3	2.4	41.6	19.3	51.5	28.8%
Interest rate – general	0.1	0.3	2.3	4.1	14.9	15.0	72.4%
Spread	0.0	0.0	1.5	40.1	11.4	48.0	20.9%
Share price risk	0.3	0.6	0.3	4.9	0.0	4.9	40.0%
Currency risk	0.0	0.1	0.1	0.9	2.6	3.2	– 61.9%
Total risk	**0.3**	**0.7**	**2.4**	**41.2**	**19.6**	**50.6**	**15.5%**

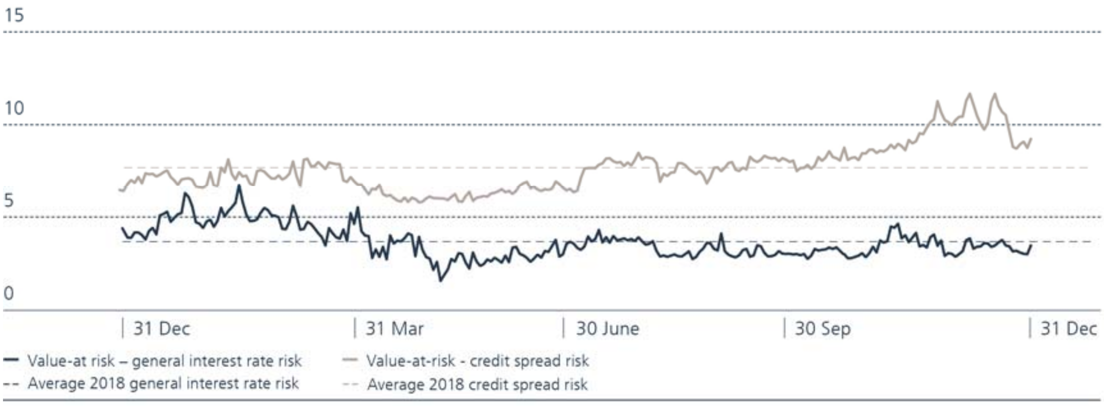
	31 Dec 2017			
Category	**Treasury and Capital Markets business division**	**Asset Management Services business division**	**Non-core business**	**Deka Group excluding guarantees**
Interest rate risk	39.1	2.6	4.0	40.0
Interest rate – general	7.8	2.6	1.3	8.7
Spread	38.1	1.6	3.7	39.7
Share price risk	3.7	0.3	0.0	3.5
Currency risk	8.8	0.2	0.5	8.4
Total risk	**43.0**	**2.5**	**3.9**	**43.8**

[1] Risk ratios for interest rate risk and total risk taking account of diversification. Includes issue-specific credit risk spread.

The VaR of spread risk rose significantly in the second half of the year. By year-end, it was €48.0m higher than the comparative figure for 2017 (€39.7m). There was a slight reduction in exposures in the liquidity reserve in the Treasury corporate centre. Against this, strategic investments in the Capital Markets business division increased and volatilities rose substantially in the fourth quarter. In line with the business model, risk concentration in terms of spread risk was mainly attributable to German, western European and US bonds issued by the public sector, financial institutions and corporates. Risk concentration for spread risk at the end of 2018 was consistent with the Deka Group’s market price risk strategy.

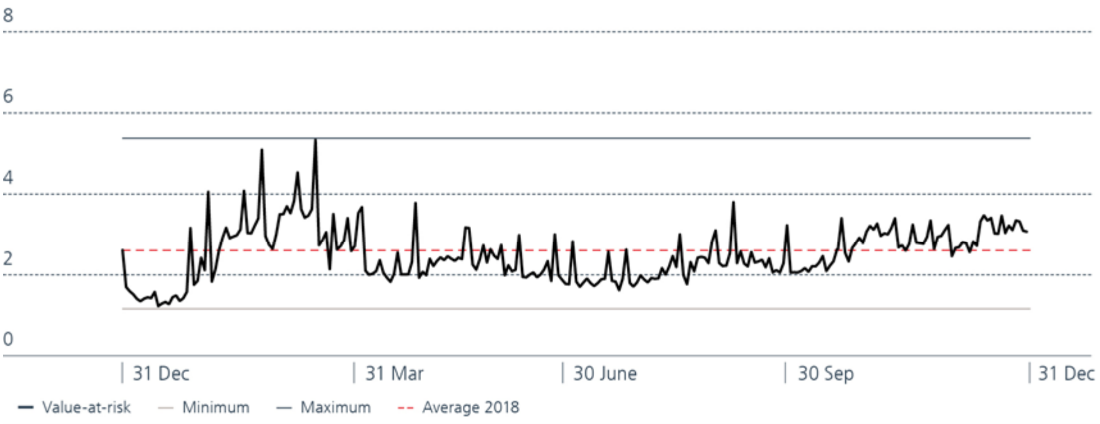
The VaR for general interest rate risk (excluding risks on guarantee products) increased from €8.7m at year-end 2017 to €15.0m. This rise was mainly due to an increase in exposure to cross-currency swaps in the Treasury corporate centre, which was caused by a higher US dollar refinancing requirement accompanying increased business with foreign currency loans.

Value-at-risk – General interest rate risk and credit spread risk in the Capital Markets trading book over the course of 2018 *€m (Fig. 27)*



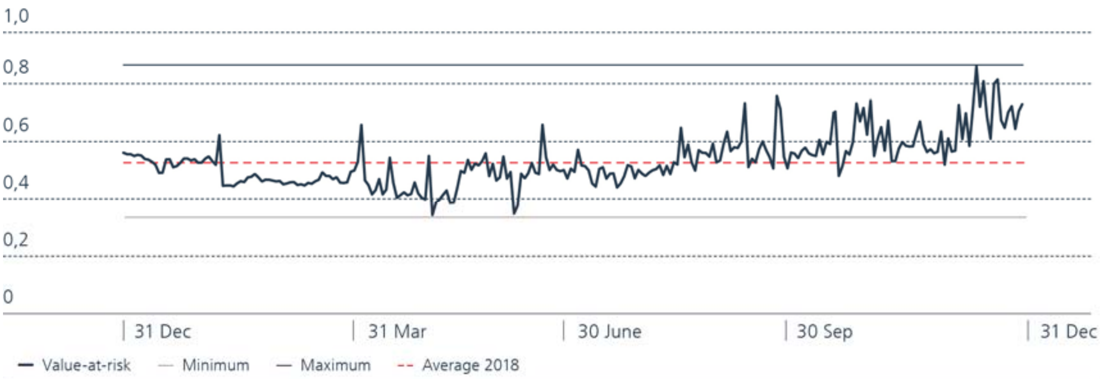
Share price risk rose compared with the year-end figure for 2017 (€3.5m) to €4.9m and remained insignificant. Share price risk in the Capital Markets business division trading book totalled €3.1m (year-end 2017: €2.6m).

Value-at-risk – Share price risk in the Capital Markets trading book over the course of 2018 *€m (Fig. 28)*



As in the previous year, currency risk resulted mostly from positions in British pounds and US dollars. It declined to €3.2m (year-end 2017: €8.4m). The change was attributable to a reduction in the open US dollar position in the Treasury corporate centre. Currency risk in the Capital Markets business division trading book stood at €0.8m (year-end 2017: €0.6m).

Value-at-risk – Currency risk in the Capital Markets trading book over the course of 2018 *€m (Fig. 29)*



Liquidity risk

Strategic framework and responsibilities

Liquidity risk is managed and monitored as an independent risk category within the framework of the Deka Group's risk strategy. The liquidity risk strategy applies to all organisational units of the Deka Group and sets out the responsibilities for liquidity risk management and monitoring. The strategy is specified by the Board of Management, reviewed at least once a year and discussed with the Administrative Board.

As liquidity risk in the narrow sense (insolvency risk) is not an immediate risk to the Group's profit that can be cushioned with equity capital, liquidity risk management forms an additional management level that complements the economic risk-bearing capacity analysis. The central objective of liquidity management is to prevent liquidity shortfalls and thus ensure that the overall solvency of the Deka Group is guaranteed on a continuous basis. Risks impacting the income statement arising from refinancing gaps (liquidity maturity transformation risk) are currently not material because the limits placed on liquidity balances in the funding matrix (FM) prohibit negative balances, meaning that maturity transformation is only possible to a very limited extent. In view of the ample levels of liquidity available to the Group overall, market liquidity risk is also not regarded as significant at present.

Within the risk management organisation, the Board of Management defines the Group's liquidity risk strategy, liquidity risk limits and early warning thresholds at Group level.

The Board of Management is supported by the MKR and MKAP when fulfilling its management responsibilities regarding liquidity risk monitoring. The two committees prepare decisions and make recommendations that are presented to the Board of Management for adoption. The Liquidity Emergency Crisis Committee is convened in the event of a liquidity emergency. It may decide all measures judged necessary to ensure the short-term solvency of the Group and may instruct all units of the Deka Group to implement these measures. The Board of Management, as a permanent member with a voting right, is the core of this crisis committee.

Liquidity positions are managed by the Treasury corporate centre. Liquidity management involves managing and monitoring short-term and structural liquidity, especially through funding matrices, and offsetting liquidity costs and benefits. At the same time, the Treasury corporate centre ensures that an adequate liquidity reserve of central-bank-eligible collateral is available. In addition, it is in charge of managing the Deka Group's liquidity reserve as well as controlling the level of liquidity ratios. Operational liquidity management across all maturities is also handled centrally by the Treasury corporate centre. This includes money market transactions on the interbank market with savings banks, the Bundesbank or the ECB, businesses, insurance companies and funds.

The liquidity position is analysed across the entire Group by the Risk Control corporate centre and monitored independently from the front office units in organisational and procedural terms.

Management and limit-setting

Funding matrices

The purpose of the funding matrix is to show expected future cash flows across the portfolio as at the reporting date. The liquidity requirement (liquidity gap) or liquidity surplus is determined for each maturity based on these flows. In addition, freely available financial resources, such as realisable assets in the form of securities, over-coverage in cover registers and other sources of funding, are identified as potential liquidity on an aggregated basis. The liquidity balance for each maturity band is determined from the sum of the cumulative liquidity gap and the cumulative liquidity potential. The balance is managed using a traffic light system comprised of early warning thresholds and limits. The liquidity balance must be positive in all monitored maturities.

The basis for the model is cash flows as indicated by legal maturities. This approach is based on the sum of all legal net cash flows per maturity band. Reconciliation between the amount from a legal perspective and expected cash flows is performed using modelling assumptions. Securities used for liquidity potential are allocated either to the liquidity buffer or to operational securities portfolios.

The liquidity buffer is used to cover possible stress-induced liquidity outflows from the banking book as well as stochastic liquidity outflows that cannot be influenced by the Deka Group or can only be influenced to a limited extent (stochastic liquidity position). As a component of the liquidity reserve, the liquidity buffer falls under the remit of the Treasury corporate centre. The minimum level required and currency composition of the liquidity buffer are determined by Risk Control on a quarterly basis. The results are reported to the MKR and MKAP. Treasury can independently propose a higher liquidity buffer above this level. The Board of Management sets the level of the liquidity buffer based on the MKAP's recommendation.

The operational securities portfolios comprise all freely available securities. These can be divided into securities that fall within the remit of the Capital Markets business division and portfolios that are allocated to the Treasury corporate centre as part of the liquidity reserve and which do not form part of the liquidity buffer.

As well as being used for normal business operations (going concern), funding matrices are also analysed under different stress scenarios. This ensures that even under stressed market conditions, an adequate liquidity reserve is maintained to cover any potential liquidity need.

The Deka Group primarily examines the "combined stress scenario" FM, which simulates the simultaneous occurrence of both the institution's own and market-wide stress factors. This FM fully implements MaRisk requirements. In addition, individual stress scenarios are examined separately in special FMs for which different modelling assumptions are used. Among other factors, market liquidity risks arising from a reduction in the market value of the securities in the liquidity potential are taken into account in the stress scenarios.

DekaBank has established a liquidity transfer pricing system (funds transfer pricing) for the source-specific internal allocation of liquidity costs, benefits and risks. The transfer prices calculated are taken into account in the management of risks and returns. The liquidity transfer pricing system is used to allocate economic costs on a source-specific basis as well as the costs for maintaining the liquidity buffer and complying with regulatory requirements (e.g. LCR). The use of a liquidity transfer pricing system for source-specific allocation (funds transfer pricing) allows liquidity to be proactively managed and efficiently allocated.

Liquidity ratios under the Capital Requirements Directive (CRR/CRD IV)

Liquidity risk is also kept under control by means of the Liquidity Coverage Ratio (LCR), which is a prescribed regulatory ratio. The LCR indicates the ratio of highly liquidity assets to net liquidity flows under stressed conditions.

Reporting

The aforementioned FMs used for management and risk monitoring purposes are prepared daily by Risk Control as part of its independent monitoring process. The corresponding early warning thresholds and limits for the liquidity balance are also monitored. The liquidity situation is reported to the MKR on a monthly basis. The Administrative Board is informed on a quarterly basis. Any overruns of the limits are reported immediately to the Board of Management. Moreover, the LCR is prepared daily in the reporting system of the Finance corporate centre and provided to monitoring units.

Current risk situation

The Deka Group continued to have ample liquidity throughout the reporting period. There were clear positive liquidity balances in all relevant maturity bands of the "combined stress scenario" funding matrix for periods of up to 20 years. This was also the case for the alternative stress scenarios. Limits and early warning thresholds were complied with throughout the 2018 financial year.

As at 31 December 2018, the accumulated liquidity balance of the Deka Group's "combined stress scenario" funding matrix in the short-term range (up to one week) stood at €8.7bn (year-end 2017: €6.4bn). In the maturity band of up to one month, the liquidity surplus totalled €11.4bn (year-end 2017: €7.0bn), and in the medium-term range (three months) it amounted to €15.2bn (year-end 2017: €12.6bn).

As in previous years, a substantial part of the Group's liquidity generation and provision was attributable to business with savings banks and funds. In relation to the net cash flows of €5.8bn on day 1, the Deka Group has a high liquidity potential (almost €13bn) that is readily convertible at short notice. The Group has access to a large portfolio of liquid securities, which are eligible as collateral for central bank borrowings, as well as to available surplus cover in the cover pool and corresponding repo transactions. The strict requirements concerning the liquidity potential ensure that the securities used for this purpose can generate liquidity even in a stressed market environment.

"Combined stress scenario" funding matrix of Deka Group as at 31 December 2018 *€m (Fig. 30)*

	D1	>D1-1M	>1M– 12M	>12M– 5Y	>5Y– 20Y	>20Y
Liquidity potential (accumulated)	12,917	12,602	2,593	63	192	192
Net cash flows from derivatives (accumulated)[1]	– 595	– 399	470	– 909	– 1,620	– 1,627
Net cash flows from other products (accumulated)	– 5,205	– 829	13,231	11,089	5,068	966
Liquidity balance (accumulated)	**7,118**	**11,373**	**16,294**	**10,244**	**3,640**	**– 469**
For information purposes:						
Net cash flows from derivatives by legal maturity (accumulated) [1]	– 595	– 672	– 576	– 1,956	– 2,534	– 1,627
Net cash flows from other products by legal maturity (accumulated)	– 5,330	– 8,428	– 16,417	– 2,469	– 362	284
Net cash flows by legal maturity (accumulated)	**– 5,925**	**– 9,100**	**– 16,994**	**– 4,425**	**– 2,896**	**– 1,343**

[1] Including lending substitute transactions and issued CLNs.

As at 31 December 2018, 64.0% (year-end 2017: 60.6%) of total refinancing related to repo transactions, overnight and time deposits and other money market products. The remainder of the refinancing concerned capital market products, primarily with longer maturity profiles. Structured issues from the Capital Markets business division made up 61% of total capital market issues. The refinancing profile for lending business was well balanced, given the maturity structure.

Money market refinancing remained broadly diversified across a range of investor groups. Most of the investors in money market refinancing are financial service providers such as clearing houses, stock exchanges and funds, or large banks and savings banks. Savings banks accounted for 12.3% of money market refinancing, while funds represented 24.3%.

Some 63.3% of total refinancing was obtained in Germany and other eurozone countries. Approximately 25% of total refinancing was accounted for by issues of bearer securities that cannot be attributed to any buyer country. The portion of refinancing accounted for by the UK, mainly consisting of the repo volumes traded with LCH.Clearnet, was reduced to 6.3%.

The regulatory requirements in relation to the Liquidity Coverage Ratio (LCR) were met throughout the period under review. As at year-end 2018, the Deka Group's LCR stood at 149.8% (year-end 2017: 152.5%). The average for the reporting year was 144.8% (previous year: 146.4%). The LCR fluctuated within a range from 136.6% to 152.0%. It was thus always substantially above the minimum limit of 100.0% applicable in 2018.

Operational risk

Strategic framework and responsibilities

The strategy laid down by the Deka Group to deal with operational risks (OR strategy) forms the basis for organisation of operational risk management. It defines the framework for the Group-wide establishment and operation of a standard system for identifying, assessing, monitoring and managing operational risks. The OR strategy applies to all organisational units of the Deka Group.

Roles and responsibilities

Due to the process-specific nature of operational risks (OR), the Deka Group pursues a decentralised approach to identifying, measuring and managing them, which contrasts with the approach taken for conventional financial risks. This approach to operational risks is based on coordinated collaboration between the units set out below.

The Board of Management has overall responsibility for the appropriate handling of operational risks in the Deka Group. In this respect, it is specifically responsible for defining and regularly reviewing the OR strategy, ensuring that required conditions for Group-wide implementation of the strategy are in place and adopting measures for OR management at Group level.

The Operational Risk unit is responsible for central components of operational risk management, especially the methodological approach, independent OR reporting, and provision of quality assurance and specialist support for local units implementing the management methods. The units risk modelling and model validation are responsible for designing and enhancing the model used to quantify operational risks and for independently validating it.

Risks are identified, measured and managed on a decentralised basis by various functions within the individual Group units. While the division heads are responsible for implementing the requirements specified in the OR strategy and the actual management of operational risks, OR managers are responsible for decentralised application of the relevant methods, particularly with regard to ensuring consistent risk assessments. The OR managers are supported by assessors, who, as process experts, identify and evaluate OR loss scenarios as part of a self-assessment process, and by loss documenters.

Cross-divisional functions

In addition to the methods for which the central OR Control unit is responsible, several specialised cross-divisional functions at Deka Group level play an important role in identifying, assessing and managing operational risks.

The Central Financial Crime Unit and the Operational Risk unit cooperate closely with representatives of the business divisions and corporate centres in the identification and evaluation of scenarios regarding criminal offences (e.g. employee fraud) as part of the annual Forum Fraud Prevention. As a contributor to the forum, the unit provides information on recorded loss events and fraud risks and adopts the resulting assessments for the OR database in the form of scenario analyses.

The Data Protection Officer informs and advises DekaBank's Board of Management, the senior management of Deka Group companies and the employees specifically involved in data processing with regard to their obligations under the General Data Protection Regulation (GDPR) and other data protection rules and regulations of the European Union and other jurisdictions. In the event of changes to legislation, the officer initiates changes to organisational structures, IT systems or business processes. The officer monitors compliance with all data protection requirements in the event of changes to IT systems or changes in structures and workflows and conducts regular control procedures. The Data Protection Officer reports directly to the Board of Management and the senior management of Deka Group companies at least once a year.

The BCM/ISM unit has a leading supportive role in defining and implementing Business Continuity Management (BCM) across the Deka Group. BCM encompasses all emergency planning measures to protect the Deka Group against losses as a result of business process interruptions during emergencies and crises, and thus also serves to minimise operational risks.

The Information Security Management unit advises the DekaBank Board of Management, the senior management of Deka Group companies and the units providing security in the first line of defence (e.g. IT, HR, facility management) on all issues relating to information security. The unit provides a catalogue of security measures, which, depending on requirements, provide an adequate level of protection for the Deka Group's information. It reviews compliance with these security measures on a regular basis. Defined procedures are used to identify and evaluate information security risks and make them transparent to risk owners. Implementation of risk-mitigation measures is followed up and incorporated into risk reporting.

Outsourcing management at the Deka Group is laid down in the outsourcing strategy and is based on a two-tier model, consisting of a central Outsourcing Management section and local outsourcing units (hybrid vendor management). The Deka Group's Central Outsourcing Management (ZAMD) section lays down overarching governance rules for outsourcing, assists with their implementation and checks compliance with requirements. ZAMD also acts as the link between the Board of Management and the senior management of Deka Group companies on the one hand, and the contacts responsible for outsourcing on the other.

Methods used

The Deka Group uses different methods for managing and controlling operational risks. Taken together, these methods, which are based on different approaches, provide a comprehensive view of both the current risk situation and expected risk trends.

The methods involve both a forward-looking (ex-ante) perspective, including self-assessment and scenario analysis, as well as a backward-looking (ex-post) perspective based on Group-wide loss documentation.

The self-assessment is based on detailed OR loss scenarios and is performed at least once a year. As well as describing and assessing risks with regard to their loss potential and the frequency with which they occur, the self-assessment process also identifies suitable measures to mitigate risk.

The scenario analysis serves as a detailed investigation and assessment of very rare OR loss events involving extremely large potential losses, which, due to their cross-unit nature and potentially high maximum loss potential, cannot be adequately identified via the self-assessment process. As part of this process, regularly updated risk factors related to both the Group's internal controls and its business environment are incorporated into the assessment of scenarios. These factors therefore increase the sensitivity of the scenarios to risk and help the Group to identify developments and determine management actions in a timely manner.

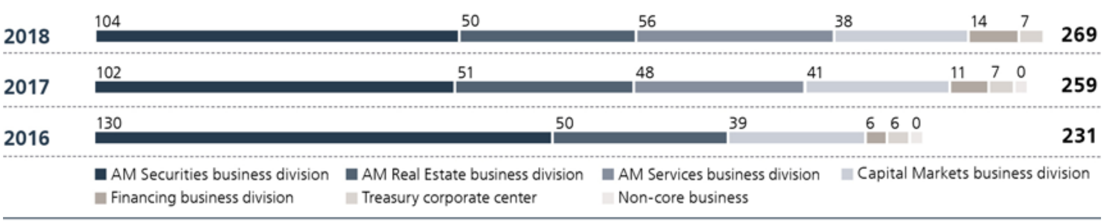
OR loss events are recorded in a structured manner with the help of a central loss database starting from a minimum gross limit of €5,000 at the Deka Group level. As well as providing a description of the loss, the database includes documentation that covers the causes of the loss and suitable measures to avoid similar cases in the future. Any expected mitigation of losses is only taken into account where the loss reduction is permissible under accounting rules. The findings of the loss documentation are used to validate the risk assessment contained in the self-assessments.

To determine the economic capital requirement for operational risks, the Deka Group uses an advanced measurement approach (AMA) that has been approved by regulatory authorities. This approach quantifies the Bank's operational risk based on a loss distribution approach, using methods set out in the approach itself and external loss data to supplement the data on internal losses. The value-at-risk figures thus identified are incorporated into both the regulatory capital and reserves requirement and the internal risk-bearing capacity analysis of the Deka Group.

Current risk situation

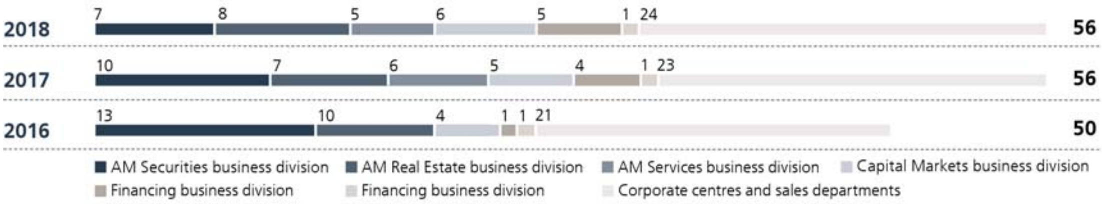
The VaR for operational risk (confidence level of 99.9%, holding period of one year) increased moderately from €259m at year-end 2017 to €269m. With almost no change in the amount of actual incurred losses, this increase in risk was triggered by the updated assessment of various risk scenarios. Firstly, the scenario analysis was fundamentally revised to comprehensively incorporate risks from interruptions to business processes. Secondly, the measures implemented to improve the transparency of valuation principles tended to result in more conservative estimates of the scale of losses and frequency of occurrence. The breakdown of VaR by business division (including the Treasury corporate centre), which is used for internal management purposes, revealed a slight shift towards the Financing and Asset Management Services business divisions, essentially reflecting the distribution of loss events in the reporting year. Risk capital allocated to operational risk stood at €335m (year-end 2017: €320m). Utilisation of this amount was 80.4%. Utilisation thus remains at a non-critical level.

Value-at-Risk *€m (Fig. 31)*



The OR loss potential identified in the Group-wide risk inventory remained unchanged year-on-year at €56m. During the year, increased risks in relation to computer sabotage, espionage and data manipulation in the Compliance corporate centre and a greater risk of legal changes in the Financing business division were balanced out in particular by a reduction in the frequency of occurrence estimated for personnel risks (which had temporarily been assessed from a very conservative standpoint) in the course of the strategic realignment at a subsidiary in the Asset Management Securities business division. In contrast to VaR, which is an upper limit for losses with a specific probability that the limit will not be exceeded, loss potential is an expected value that results from the estimated frequency of occurrence and scale of losses of all OR scenarios in the Deka Group.

Loss potential *€m (Fig. 32)*



Based on the Federal Ministry of Finance (BMF) circular on the tax treatment of cum/cum transactions of 17 July 2017, tax risks exist in connection with relief from withholding tax (*Kapitalertragsteuer*) on share transactions made around the dividend record date in the years 2013 to 2015. All matters are reported in the 2018 consolidated financial statements in accordance with DekaBank's interpretation of the relevant tax regulations and accounting standards.

In addition, DekaBank has performed a voluntary investigation to ascertain whether its involvement enabled third parties to conduct share trades around the dividend record date and make use of abusive tax structures or whether it was otherwise involved in such structures. The investigations concerning the matter have not given any indication that this was the case. Based on the findings currently available to it, DekaBank considers it unlikely that the tax authority will be able to make a successful claim in relation to these matters.

Compliance

The Deka Group's Compliance corporate centre, which reports directly to the Board of Management, performs the compliance functions required by supervisory law. It is designed to ensure, in a durable, effective and independent way on behalf of the Board of Management, that legal requirements and regulatory standards as well as the company's internal standards and requirements are adhered to in order to protect the Deka Group from financial loss. The Compliance corporate centre also carries out the compliance functions and the role of Money Laundering Officer for a large number of regulated subsidiaries in Germany, under service level agreements. Compliance duties for Luxembourg-based companies are performed by the local Compliance unit in Luxembourg. The Responsible Officer position is held by the head of the Compliance corporate centre for relevant units in Germany and Luxembourg. The international offices in London and New York have local Compliance Officers who have a reporting line to the Compliance corporate centre.

The Compliance corporate centre is responsible for monitoring compliance with statutory and regulatory requirements arising under capital markets and investment law pursuant to the German Securities Trading Act (*Wertpapierhandelsgesetz* – WpHG), the German Investment Code (*Kapitalanlagegesetzbuch* – KAGB) and relevant European rules. The corporate centre works to ensure that compliance requirements and regulations relating to capital market and real estate activities are adhered to.

In addition, the Compliance corporate centre fulfils requirements under the German Money Laundering Act (*Geldwäschegesetz* – GwG) and German Banking Act (*Kreditwesengesetz* – KWG), including ensuring that there are internal safeguards to prevent money laundering, terrorist financing, fraud and other criminal actions in accordance with section 25h (1) KWG and to prevent corruption and bribery by providing a central office within the Bank. The corporate centre is also responsible for monitoring compliance with financial sanctions and embargoes at national and international level in accordance with the requirements of section 7 of the German Foreign Trade Ordinance (*Außenwirtschaftsverordnung*) and the EU Blocking Regulation (EU) 2271/96 as amended.

In addition, the requirements of MaRisk (AT 4.4.2) are fulfilled by a compliance function which is responsible for identifying and limiting compliance risks, and advising the Board of Management and the specialist units, particularly in connection with the implementation of effective processes and procedures to ensure adherence to significant legal regulations and requirements related to compliance.

In carrying out its duties, the Compliance unit advises and trains the specialist units on an ongoing basis. It also carries out risk-based reviews regarding adherence to statutory and regulatory requirements related to compliance and to the overall compliance guidelines.

The Compliance unit performs a risk analysis and assesses the procedures and controls established by the business units to determine whether they are appropriate and effective. An additional risk analysis is prepared on the topics of money laundering, terrorist financing, other criminal actions and financial sanctions.

The Compliance Officer provides a written report on the activities of the organisational unit to the Board of Management on a regular basis, in accordance with legal requirements (at least once a year), and is also the point of contact for supervisory authorities and other governmental agencies. In addition, the chairman of the supervisory board has the right to demand the immediate provision of information from the Compliance Officer, with the involvement of senior management.

The ongoing implementation and integration of compliance requirements in day-to-day business is intended to contribute to the transparent adherence to compliance standards as well as to help reinforce trust among investors and the public and safeguard customer interests. The compliance regulations also protect employees; they help to maintain the Deka Group's good reputation in the market and ensure that conflicts of interest are managed effectively.

Accounting-related internal control and risk management system

The Board of Management of the Deka Group has overall responsibility for the internal control and risk management system. The system is based on a Group-wide organisational and control structure. The Finance corporate centre is responsible for preparing and coordinating monthly, quarterly and annual financial statements. The units involved in the accounting process are appropriately staffed, in terms of both the number of personnel and their qualifications. Furthermore, a regular and cross-divisional exchange of information between the units makes an important contribution to minimising the risks associated with the preparation of financial statements.

In principle, risks exist in the accounting process as a result, for example, of inconsistent application of reporting and accounting standards, incorrect recognition of business transactions, and due to malfunctions and errors in the IT systems used for accounting purposes.

The Deka Group's internal control system ensures proper accounting in accordance with applicable statutory and legal provisions. Its key features are the rigorous integration of control activities and procedures into processes, in particular by applying the dual control principle as well as risk-oriented segregation of duties in corporate centres. To this end, the Bank performs automated routine checks and, when required, manual control and reconciliation procedures. The implementation of these activities and the procedures to be followed are documented in specialist and implementation plans.

Additional checks – for example in order to substantiate balance sheet items – are carried out at an aggregated level by "sub-position managers". These employees, who have in-depth product knowledge, are also responsible for regularly calculating results.

The accounting recognition of business transactions is governed centrally by a Group accounting policy. This policy describes key accounting requirements and documents the standard accounting processes that apply throughout the Group. This ensures, amongst other things, that the same business transaction is accounted for uniformly in different Deka Group units and companies in compliance with the applicable accounting standards. Specific work instructions are used to implement Group policy at operational level in individual specialist departments. These instructions also describe the control mechanisms to be followed. Guidelines and authorisation procedures have been developed for the central systems that generate accounting information as part of the preparation of financial statements. Compliance with these guidelines and concepts is regularly monitored by Internal Audit.

The Deka Group mainly uses standard software for accounting. The systems are safeguarded against unauthorised access by external parties and are comprehensively backed-up to protect against data loss. The internal control system is regularly reviewed by Internal Audit.

Business risk

The business risk strategy set by the Board of Management serves throughout the Group as the basis for monitoring and managing business risks and incorporating them into the Group's risk-bearing capacity analysis. A variety of complementary instruments are employed to identify, assess and manage business risks.

Key risk factors for the funds business are the planned and actual commission income and expenses and the size of the assets under management. Both assets under management and net commission income depend on customer behaviour and the market environment. Account is taken of fund price movements and unexpected net outflows when determining fund volatility. For banking activities, margins on commission business are taken into account as an additional risk factor. There are currently no business risks to be considered in the Treasury corporate centre.

In the year under review, the VaR for business risk increased moderately to €250m (year-end 2017: €234m). Against the risk-reducing impact of higher realised net commission income in the asset management divisions, volatilities for equity funds, real estate funds and other funds recently rose again. There was also higher expected net commission income, which is taken into account in business risk, in the Asset Management Securities business division. The change in the calculation of potential variance from plan had no significant impact on the level of business risk. Risk capital allocated to business risk was reduced from €400m at the end of 2017 to €365m. Utilisation was 68.5% and thus at a non-critical level.

Other risks

Shareholding risk
Equity investments (shareholdings) include all direct and indirect holdings of the Deka Group in other companies, regardless of their legal form. Equity investments held as credit substitute transactions fall under the credit risk strategy. In principle, the Deka Group pursues strategic interests when taking an equity interest. There is no intention to achieve short-term profit.

The basis for determining the shareholding risk position is the IFRS book value of the (unconsolidated) equity investment. The risk is measured on the basis of the volatility of a benchmark index from the equity market.

At the end of 2018, the VaR related to shareholding risk totalled €36m and was close to the previous year's level (year-end 2017: €37m). The risk capital allocated to shareholding risks remained unchanged at €60m, with utilisation of 60.4%.