OP Financial Group's Capital Adequacy and Risk Management Report 2021

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Introduction

OP Financial Group discloses information concerning risk management and capital adequacy for 2021 in this OP Financial Group's Capital Adequacy and Risk Management Report and in OP Amalgamation capital adequacy tables. The reports contain information on OP Financial Group's risk management and the capital adequacy of the consolidated group of the amalgamation of member cooperative banks, as specified in Part 8 of the Capital Requirements Regulation of the European Parliament and of the Council No. 575/2013 (CRR) in compliance with the guidelines issued by the European Banking Authority, or Pillar III disclosures.

The first part of the Capital Adequacy and Risk Management Report presents the qualitative information related to OP Financial Group, i.e. the Risk Appetite Statement and Risk Appetite Framework as well as Capital Adequacy Management Principles, Declaration on the adequacy of risk management arrangements approved by the highest management body, and risk statement as well as key risk management indicators that describe OP Financial Group's risk-bearing capacity and risk appetite relative to OP Financial Group's operations and significant risks. The second part presents the key information on OP Financial Group's capital adequacy and the financial conglomerate's capital adequacy.

Tables based on standard tables issued by the European Banking Authority (EBA) regarding OP Amalgamation are published in English in Excel format in the OP Amalgamation capital adequacy tables 2021. Given that this information is based on the consolidated credit institution capital adequacy of the amalgamation of member cooperative banks, it is not directly comparable with other information disclosed on OP Financial Group.

OP Financial Group annually publishes its Capital Adequacy and Risk Management Report. In addition, the quarterly OP Amalgamation capital adequacy tables contain such information that regulation requires to be disclosed more often than once a year.

In addition to this report, information on risk management is included in other reports related to OP Financial Group's annual reporting. OP Financial Group's Corporate Governance Statement 2021 includes a summary of OP Financial Group's Risk Appetite Statement and Risk Appetite Framework. OP Financial Group's Report by the Board of Directors and Financial Statements for 2021 contains sections of the Risk Appetite Framework required by regulation governing financial statements (Note 2. and Notes 46–83 to the financial statements) and a review of the risk exposure of business segments as part of the Report by the Board of Directors.

Information on OP Financial Group's Corporate Governance and steering systems is available on websites covering respective issues (op.fi > OP Financial Group > About us > Corporate Governance) and in OP Financial Group's Corporate Governance Statement. A description of the remuneration schemes and practices can be found in OP Financial Group's Remuneration Policy for Governing Bodies and OP Financial Group's Remuneration Report for Governing Bodies, in Note 10 to the financial statements, as well as OP Financial Group's website dealing with remuneration (op.fi > OP Financial Group > About us > Corporate governance > Remuneration).

Information may remain undisclosed in OP Financial Group's Capital Adequacy and Risk Management Report and in the OP Amalgamation Capital Adequacy Report to the extent such information is irrelevant and their effect, if any, is insignificant on OP Financial Group's profitability, earnings power, balance sheet or capital adequacy. Irrelevant, undisclosed information is dealt with at the end of the OP Amalgamation capital adequacy tables.

OP Financial Group's Capital Adequacy and Risk Management Report and the OP Amalgamation capital adequacy tables are unaudited.

1 OP Financial Group's risk management

1.1 OP Financial Group's Risk Appetite Framework

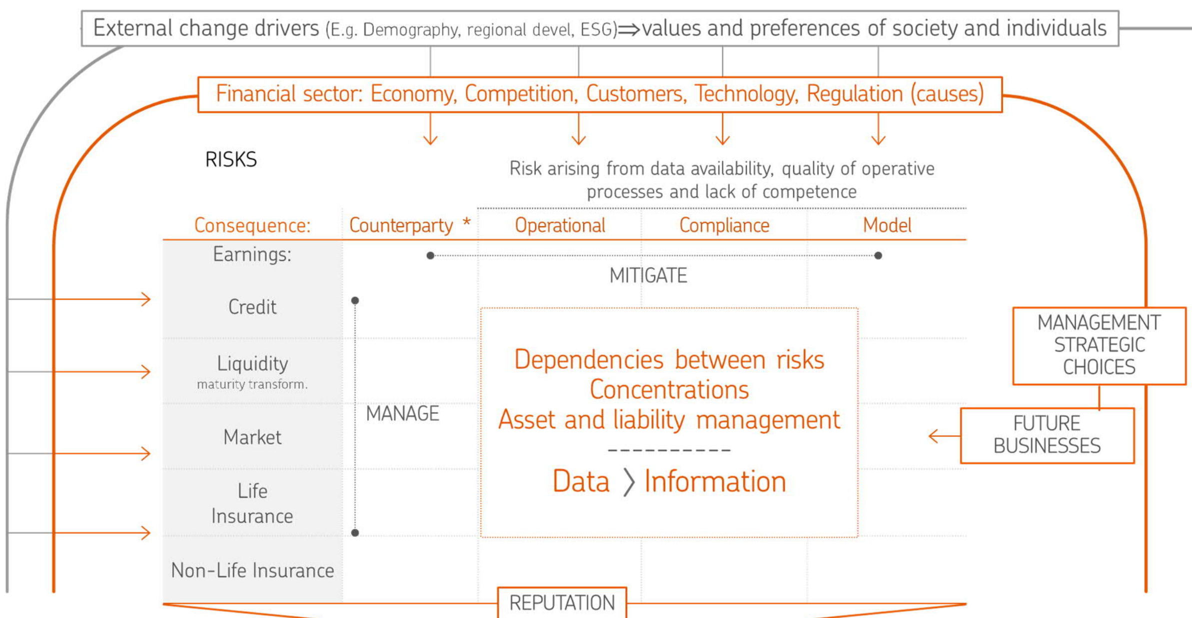
1.1.1 Overview of OP Financial Group's significant risks

OP Financial Group prepares its Risk Appetite Statement and Risk Appetite Framework to cover all operations and these general risk management principles are further specified for each revenue logic (by product and service). The bases for establishing revenue generation models include services provided to customers, processes needed in the production of services, analyses reporting of operations and what risks will be caused to OP Financial Group by providing these services.

Because of the characteristics of OP Financial Group's business and industry, risks have two fundamental principles differing from each other: OP Financial Group may earn revenue through risks (earnings risks) or risks may be a consequence of something (consequential risks). Because the review of earnings risks requires that OP Financial Group examine critical success factors from the perspective of business, the sources and management of earnings risk are grouped in more detailed descriptions of significant risks by revenue logic, except for Group-level risks that apply to all revenue logics. Because the majority of consequential risks are Group-level ones and because the review of consequential risks focuses on reducing the negative effects of potential risk materialisation, these risks are grouped in the more detailed descriptions of significant risks at Group level. The graph below shows a summary of OP Financial Group's significant risks and their sources. The sources and root causes of significant risks are presented in shaded grey and orange in the periphery of the figure's table. Similarly, the negative effect of the potential materialisation of risks on OP Financial Group's trust and reputation is also described outside the table.

It is highly important to note the following in the graph's table:

- Taking earnings risks may cause consequential risks in addition to the sources and causes of OP Financial Group's external risks.
- The combined effect of earnings and consequential risks may result in new Group-level, due, for example, to concentrations and interdependencies between risks.
- Due to the different function of earnings and consequential risks, the Group primarily aims to manage earnings risks whereas it primarily aims to reduce consequential risks.



The Banking revenue generation models contain both the Retail Banking and Corporate Banking segment. The Banking revenue generation models are grouped into three revenue logics in risk management: Banking through the balance sheet, Markets and Asset Management revenue logics. Life and Non-life Insurance revenue generation models belong to the Insurance business segment.

OP Financial Group's risk management and compliance are based on the principle of three lines of defence. The first line of defence comprises business lines, the second line of defence comprises risk management and compliance functions independent of the business lines/divisions and the third line of defence comprises Internal Audit. Each line of defence has its own role in performing the risk management process efficiently.

At OP Financial Group, the first line and the second line of defence in risk management cooperate on an ongoing basis. This is to ensure that all expertise needed to develop and manage operations is in use in advance. The lines of defence build the risk management process together where the special features of OP Financial Group's business are taken into consideration. Responsibilities of the first and second lines of defence have been clearly divided.

- The business units fulfil OP Financial Group's strategy, are responsible for planning their own operations and their efficient and effective implementation and for their internal control. Only the business concerned makes business decisions and is responsible for the quality of its customer service, its business continuity as well as its earnings and risks.
- For consideration by OP Financial Group's management, the second line of defence prepares a risk management framework within the limits of which the first line of defence implements risk-taking and risk management related to its daily business. The second line of defence supports the first line of defence by consulting them especially in matters that are part of their own expertise. The second line of defence also oversees compliance with the risk management framework and carries out an independent analysis related to the balance between earnings, risks and capital and liquidity acting as buffers as well as ensuring business continuity during incidents too.
- Internal Audit that is independent of other lines of defence acts as the third line of defence.

1.1.2 OP Financial Group's risk management

1.1.2.1 OP Financial Group's Risk Appetite Statement

OP Financial Group mainly takes risks related to the carrying out of its mission. In all of its operations, OP Financial Group emphasises moderate risk-taking so that it could reasonably foresee the financial result and could serve its customers according to its mission, even in exceptionally difficult circumstances.

Together with the Group's strategy, OP Financial Group's Risk Appetite Statement (RAS) create bases for the target-setting of businesses, binding on all OP Financial Group companies. The RAS therefore also governs the guidelines issued by OP Financial Group's central cooperative to member credit institutions aimed at securing and liquidity and capital adequacy.

In OP Financial Group, the majority of profits come from customer business and the earnings risks taken and priced in this context that describe OP Financial Group's risk appetite. The quantitative limits set in risk policies guide the management of earnings risks together with other guidelines.

Consequential risks also arise from business that OP Financial Group seeks to reduce. No such consequential risks involve the generation of returns, but their materialisation would lead to operational disruptions, extra costs and/or loss of reputation.

Earnings and consequential risks relate to the current business and the valid agreements that OP Financial Group companies have concluded with their customers and other counterparties. Risks of future business may affect the success of the years to come. OP Financial Group manages risks associated with future business by means of choices made by the management.

In order to be able to carry out operations in accordance with earnings risks and thereby risk appetite, OP Financial Group ensures that its companies have sufficient risk-bearing capacity, or risk capacity and risk-taking capacity. Risk capacity involves expertise and risk-taking capacity involves capital and liquidity. Risk capacity requires, for example, customer relationship skills and the flexibility to change OP Financial Group's risk-taking. Within each business concerned and at

Group level, OP Financial Group seeks to identify the interdependencies of various risks and the resulting risk concentrations, and to organise their management appropriately.

Strong risk-taking capacity secures the cost-effective implementation of the required market transactions (refinancing, reinsurance, derivatives). OP Financial Group aims to maintain a level of capital and liquid assets and a funding and investment portfolio structure with the aid of which it is highly likely to be able to implement its current business models. The Group defines the target level of risk-taking capacity by means of external credit rating.

The Risk Appetite Statement is condensed into a limited number of principles as well as limits for measuring risk-taking capacity and tolerances for measuring risk capacity with which OP Financial Group's management decides how much the Group can put its risk-taking capacity to use and how it is allocated to revenue logics and business segments in accordance with the Group's strategy and risk appetite.

Based on the limits and tolerances set in the Risk Appetite Statement, Risk Management prepares more detailed proposals for limits and OP cooperative banks' proposals for control limits together with the business lines in such a way that the quantitative risks defined as significant within OP Financial Group are limited appropriately in revenue logic-specific risk policies. Quantitative limits are supplemented by guidelines included in risk policies and other guidelines issued by Risk Management to ensure that also the risks that are more difficult to quantify are covered. This is how OP Financial Group ensures that the Group or any of its companies does not take excessive risks to endanger the Group's or the company's capital adequacy, profitability, liquidity and business continuity.

1.1.2.2 OP Financial Group's liquidity and capital management

The liquidity strategy defines liquidity management tools, utilisation of various funding sources, ensuring liquidity and the responsibilities and roles of those involved in the liquidity management process. OP Financial Group manages its liquidity position through the proactive planning of the funding structure, the monitoring of the liquidity status and a well-balanced liquidity buffer, planning and management of daily liquidity, the contingency plan based on emergency preparedness, as well as the effective and ongoing control of the Group's liquidity status. Chapter Banking has a more detailed description of liquidity management and control in the amalgamation.

Capital management aims in all circumstances to proactively control and ensure that OP Financial Group's capital adequacy meets the set targets and official requirements and thus ensure OP Financial Group's business continuity. OP Financial Group's capital plan supports the assessment of the adequacy of the Group's capital and clarifies practices in case the capital base decreases. The capital plan is aimed at proactively ensuring an adequate capital base even in exceptional conditions.

OP Cooperative's Board of Directors approves OP Financial Group's capital adequacy and liquidity assessment processes, i.e. Internal Capital Adequacy Assessment Process (ICAAP), Own Risk and Solvency Assessment (ORSA) and Internal Liquidity Adequacy Assessment Process (ILAAP), as part of OP Financial Group's Risk Appetite Framework (RAF). In its quarterly risk analysis, Risk Management reports to the management on change drivers in the business environment, OP Financial Group's risks, and capital and liquidity adequacy. OP Financial Group's ICAAP, ORSA and ILAAP assessments are mainly based on the continuous analysis by risk management. With the help of Risk Management, the Risk Committee of the Board of Directors prepares statements on capital adequacy (CAS, Capital Adequacy Statement) and liquidity adequacy (LAS, Liquidity Adequacy Statement) and a management assessment of capital adequacy (ORSA). After the approval by the Board of Directors, Risk Management sends the statements to the ECB and the management assessment to the Finnish Financial Supervisory Authority every year.

For capital management, OP Financial Group makes a policy decision on how much risk-taking capacity OP Financial Group will allocate to risk-taking and what portion will be left as a management buffer. This is expressed as a ratio of the need for capital specified internally (economic capital) to the capital actually in use (internal capital). This ratio in OP Financial Group is determined at least at Group level and by revenue logic. OP Financial Group set a risk-taking limit and tolerances for this ratio, so that business continuity is even ensured in exceptional circumstances. The need for economic capital represents OP Financial Group's own best estimate of the need for capital by risk and function. It arranges functions and

their risks in order of size. OP Financial Group allocates the internal capital to revenue logics and business segments in accordance with the Group strategy and risk appetite.

The capital available and the capital requirements and the ratio between the two are monitored and controlled through concepts and calculation methods defined by the relevant authorities at both Group and company level. On the basis of these indicators too, OP Financial Group aims to be among the strongest players in its peer group and keep its required total capital annually decided by the supervisor at the level of the best European banks.

In the context of setting limits, a buffer refers to the difference between the measurement result and the set limit value. Depending on the metric, the buffer can be interpreted as a time period or capital amount providing a 'breathing space' for management to act before the value limit is breached. The buffer can be divided into two parts: (a) the management buffer is the difference between the limit set by management and the binding limit value and (b) the operational buffer is the difference between the current value given by the metric and the limit. The management buffer secures the continuity of OP Financial Group in a situation where the limit set by management is breached. The operational buffer gives business management decision-making powers within the framework of the limit. Capital management involves making a policy decision on the capital structure. The majority of capital has to be available to the Group and its companies immediately and without restrictions to cover their losses in such a way that its stability must not involve mitigating terms. This means that OP Financial Group's capital management is primarily based on a solid capital base (CET1). CET1 capital is supplemented with lower-priority amounts that do not fulfil the conditions for CET1 capital but these can be used to fulfil other regulatory requirements and which indisputably cover losses. Both the authorities' capital adequacy requirement and the economic capital requirement are used to determine the need for capital, but they differ in many respects. Capital adequacy measurement helps to ensure the stability of the financial markets: setting a minimum capital requirement for the bank (as a short-term precondition for retaining its licence), comparison of capital adequacy between supervised banks and assessment of the risk associated with the financial system. Economic capital is a more risk-based metric with respect to accuracy and risk coverage. Risk types not included in the capital adequacy measurement, but which must be included in the economic capital requirement, include the banking business interest rate risk, insurance business market risks, and other risks to be assessed. Furthermore, measurement of capital requirement for large corporate exposures takes account of customer and industry concentrations and the differences in the riskiness of key industries, including the real values of collateral. Since precise risk assessments are preferred for the economic capital requirement, there are differences between calculation parameters.

The economic capital requirement controls the Risk Appetite Statement and risk-weighted assets more extensively and carefully than the capital requirements set by the authorities. This ensures that forecasts and business goals will not jeopardise the Group's operating conditions in the long term.

1.1.2.3 Responsibility of OP Financial Group's management in risk management, and risk management arrangement

The principles for the arrangement of OP Financial Group's risk management set by OP Cooperative's Board of Directors and prepared by OP Cooperative's senior management are as follows:

- In terms of risk-taking, senior management prepares business unit strategic choices that are based on OP Financial Group's Risk Appetite Statement (RAS) document, confirmed by the central cooperative's Supervisory Council. The RAS outlines and gives grounds for what risks each business unit is ready to take and to what extent. The business units are obliged to operate within the limits of these restrictions.
- Senior management decides on the division of responsibilities as regards risk-taking. The Group defines what risks different revenue logics can take and any potential elaborations on what risks can be taken by legal entities and various functions within these revenue logics.
- The governance structure provides the basis for the fact that the key principles guiding operations and the related policies and operating instructions have been prepared and resolved appropriately and that each activity is assessed and supervised in an appropriate manner in view of quality, extent and complexity by expert parties that are independent of business, in addition to monitoring performed by the business concerned.

- The central cooperative's Board of Directors is the most important decision-making body for risk management tasks. In addition, the central cooperative's Supervisory Council confirms the decisions by the Board of Directors that apply to OP Financial Group's risk appetite. The Risk Committee of the Board of Directors assists the Board of Directors in performing duties related to risk-taking and risk management. The Committee has no independent decision-making powers. Based on the decision by the President and Group Chief Executive Officer, the Executive Management Team has set up a Risk Management Committee, Steering and Compliance Committee and Banking ALM Committee that approve instructions and policy descriptions specifying the Risk Appetite Statement and the Risk Appetite Framework. Duties related to the risk management of management bodies are described in greater detail in the charters and the decision-making and management system of the central cooperative consolidated. OP Financial Group's Corporate Governance Statement provides more detailed information OP Financial Group's corporate governance.
- OP Financial Group's remuneration schemes are built in line with the Group's mission, core values and targets. Remuneration may not encourage unnecessary risk-taking or actions that are against the customer's best interest. Compliance and Risk Management are involved in the preparation of the remuneration principles, remuneration policy and remuneration schemes and in the determination of supervisory practices related to remuneration processes.
- The principles of corporate governance as required by joint and several liability define and determine the corporate governance of the central cooperative and its member cooperative banks, as required under joint and several liability.
- In addition, the principles of internal control, good corporate governance, good business practices and corporate security set preconditions for practices.

1.1.2.4 Objectives of OP Financial Group's risk management

The risk management process is a whole which involves all tasks that help OP Financial Group to ensure the achievement of the following risk management objectives:

- The processes of business units provide a solid foundation for high-quality customer service, but at the same time they are cost-efficient, reliable and, whenever necessary, can be quickly restored to working order. In addition, the operational processes generate all information needed in the performance of tasks in key functions (customer management, sales, risk management, finances, regulatory reporting), in functional analysis and management reporting. Furthermore, the management of this information has been duly organised.
- In the business units, there is balance between earnings, risks, capital and the liquidity buffer, and cumulative risks at OP Financial Group can be identified and they can be managed, for example, through principles of the division of responsibilities.
- The capital adequacy and liquidity of the business units of OP Financial Group and the entire Group are at a level that OP Financial Group can make all its business decisions completely independently. Nor has OP Financial Group or its companies have other commitments that would prevent from carrying out strategy-based measures, at least for a longer time. In addition, OP Financial Group has operational flexibility to quickly enough adjust its operational processes to achieve its strategic goals and targets.
- No internal or external party questions the validity of OP Financial Group's joint and several liability.

Once the above risk management objectives have been achieved, OP Financial Group's businesses can implement their strategy without the internal or external factors hindering business significantly. This is how OP Financial Group's risk management processes support for their part the implementation of OP Financial Group's strategy and related monitoring.

1.1.2.5 OP Financial Group's risk management methods and implementation

Risk Management prepares the RAS and RAF as well as risk policies in cooperation with the business concerned tailored by revenue logic that directs operations towards the strategy, including risk limits, control limits and decision-making powers to be submitted to the competent body for decision. Proposals for limits and control limits must include grounds for concluding how the proposed metrics and level have been achieved. Limits and control limits set a maximum limit for risk-

taking. Exceeding the limit or control limit or a threat of the exceeding the limit triggers an escalation procedure. If need be, Risk Management arranges other more detailed operating instructions for risk-taking and risk management.

As far as possible, the instructions framework must at the same time meet the following two conditions:

- The framework guides business towards the strategy, limits risk-taking according to risk appetite and fosters prudent and careful practices; and
- The framework makes it possible that business decisions deviating from the RAS and the risk policies that specify it can be made on justified grounds but to a limited extent. In such a case, the draft resolution must have been prepared with special care and reveal well-defined grounds for the deviations. The risk management guidelines must clearly reveal how such deviations are supervised by the appropriate body and what the responsibility of the supervisory body is.

In the risk identification process, Risk Management together with the representatives of the businesses concerned and other internal stakeholders assesses factors that are or may be involved in OP Financial Group's business and/or OP Financial Group's business environment and in the operations and exposures of its companies in the short- and longer term. This also involves identifying and assessing concentration risks within individual types of risk and cumulative Group-level risks and risk concentrations. In doing so, particular attention must be paid to changes in mutual dependencies. Based on the identification process, Risk Management maintains a list of identified risks and their underlying factors. Based on the results of the risk identification process, Risk Management annually presents OP Financial Group's most significant risks in its Risk Appetite Statement to the Board of Directors for decision and to the Supervisory Council for confirmation. The results of the risk identification process are also used in the preparation of risk policies when specifying risk management principles, measures, objectives and limits based on risk-bearing capacity and risk appetite. The results are also used to maintain the economic capital requirement and stress testing framework.

Risk Management determines the risk scorecards suitable for each function and analysing, quantifying, limiting and monitoring each function's risk. The methods and models used in risk measurement and the related needs for data are described and documented extensively and are implemented in such a way that various risks can be made consistent within OP Financial Group, to be comparable in terms of capital and liquidity needs.

Key methods and models are also validated before their implementation. The functioning of the models is monitored after their implementation.

In general, the risk management methods and models must be in line with the methods used in the pricing of each business and with those used in performance measurement to make it possible to analyse the balance between the financial result, risks and capital.

OP Financial Group uses risk management measurement models (internal models) it has developed for risk measurement, capital requirement assessment, business price determination and the determination of values used in accounting. The models take account of their compatibility with OP Financial Group's business model, risk appetite and risk profile. The Group and its companies share the related key parameters and assumptions.

OP Financial Group uses stress tests to assess how various serious, albeit potential, situations calibrated on a historical basis, and those differing from the assumptions of risk models, may affect the liquidity, risk exposure, profitability and capital adequacy of the Group and/or its companies. Stress tests assess the effect of both individual stress factors and the joint effect of multiple variables acting simultaneously. In stress testing, the Group utilises reverse stress tests, in addition to various sensitivity and scenario analyses. Stress tests support and supplement the whole picture given by other risk measurement methods of OP Financial Group's overall risk exposure and challenge the sufficiency of economic and capital adequacy requirement. Stress tests are aimed covering all risk types identified as significant in the Risk Appetite Statement.

When the above infrastructure is in place, a basis has been provided for daily operational risk management for businesses (customer and transaction-level risk identification, analysis and pricing and ongoing customer monitoring) and for internal operational control.

Customer transactions arising from service involve risks borne by OP Financial Group that are managed at portfolio level within revenue logics. Portfolio-level exposures are authorised clearly and they are described in risk policies or other instructions. If no person in charge can be found for risks arising from certain operations, such operations are not principally carried out. The starting point is that responsibility for risk can be assigned only to a function which can use various measures to affect the risk level.

1.1.2.6 Independent risk control and analysis performed by OP Financial Group's Risk Management

Risk Management is responsible for supervision of compliance with the instructions it has issued and reports any significant deviations to the Board of Directors' Risk Committee of the central cooperative and Compliance.

Risk Management supervises OP Financial Group's and its companies' daily operational activities and the related risk and liquidity management, risk-taking, pricing of business units, business and risk management processes, and their quality. It analyses the risk exposure of the Group and its companies and its developments, the maintenance of risk-taking within the set tolerances, limits and control limits and compliance with the risk policy. In addition, Risk Management secures business continuity by supervising the annual maintenance and testing of business continuity plans within the Group companies and the central cooperative consolidated.

Risk Management produces reports through which it is possible to monitor, using methods applicable to a revenue logic, how each business remains within the set quantitative restrictions and how it complies with the qualitative requirements set for operations.

1.1.3 OP Financial Group's significant risks: sources and management

1.1.3.1 Definitions and sources of significant risks

Below is a summarised description of the definitions and sources of OP Financial Group's significant risks.

Credit risks	Credit risk refers to the risk that a contracting party to a financial instrument is unable to fulfil their contractual repayment obligations and thereby causes a financial loss to the other party.
Liquidity risks	Liquidity risk arises from the imbalance between the timing and amounts cash flows related to granting and obtaining financing, insufficient collateral needed to obtain financing and the temporal and counterparty- and instrument-specific concentration. This may lead to a company's weaker liquidity if it has not sufficiently prepared for liquidity. Liquidity risks also involve market liquidity risk, which means a risk of failing to execute market transactions within a desired time and/or at an estimated price.
Market risks	Market risk refers to an unfavourable change related to the value of a contract or contract revenue due to price changes observed in the financial market. Market risks include interest rate, currency, volatility, credit spread, equity and property risks associated with on- and off-balance sheet items as well as other potential price risks.
Non-life insurance risks	Non-life insurance risks comprise risk of loss or damage, and provision risk. Risk of loss or damage occurs when there are an above-average number of losses, or they are exceptionally large. Provision risk arises when the claims expenditure incurred for the losses that have already occurred is higher than expected or the timing of the payment of claims deviates from expectations.
Life insurance risks	Life insurance risks comprise biometric risks, cost risk and customer behaviour risks. Biometric risk arises when forecasts for the lifetime of those insured

	differ from those in insurance products that include endowment risk or forecasts for the mortality of those insured (e.g. unpredicted growth in mortality caused by a catastrophe) differ in the products with death risk. Biometric risk also arises when forecasts for when an insured person's incapacity for work begins differs in products including disability risk but that risk is very small in OP Life Assurance Company.
Counterparty risks	Counterparty risk refers to the risk of the contracting party not fulfilling its financial obligations. Counterparty risk may be related to a derivative contract, trading or a reinsurance contract.
Operational risks	Operational risk is caused by all business operations and it may result from insufficient or incorrect practices, processes, systems or external factors. OP Financial Group's operational risks also include ICT and security risks. The data capital risk included in operational risks means potential losses, loss of reputation or deterioration of operations caused by uncertainty in decision-making, management and reporting related to data and the information derived from it.
Compliance risks	Risks caused by non-compliance with external regulation, internal policies, appropriate procedures or ethical principles governing customer relationships.
Model risks	Model risk refers to potential losses or loss of reputation caused by decisions made on the basis of the results of models due to errors made in the development, implementation or use of models. The model means a method used to translate the source data based on mathematics, statistics and expert assessments into data guiding business decisions or quantitative data related to financial position or risk exposure.
Reputational risks	Risk of the loss of reputation or trust caused by negative publicity or materialisation of a risk.
Concentration risks	Risks that may arise due to a business having an excess concentration of risk in individual customers, products, lines of business, maturity periods or geographical areas. Concentration risk can also arise due to a concentration of service providers or processes.
Risks associated with future business	Risk associated with the conditions and volumes on which similar or entirely new agreements are based. The underlying factor behind this may lie in inadequate reaction and inflexibility for change when changes occur in the business and competitive environment or in the values of customers or in technology. The key means of managing the risks of future business lie in management decisions.

Counterparty risks and risks associated with future business are not dealt with as a specific whole because risks associated with future business may emerge in the form of various significant risks and counterparty risks emerge as part of various risk types.

Customer behaviour risk may materialise in several risk types (the impact of a change in customer behaviour affecting matters such as the value of insurance contracts, volume of deposits or early repayments of contracts).

Residual risk is the risk which cannot be eliminated or which the entity is unwilling to eliminate. Residual risk can be considered synonymous with risk. As such, residual risk is not an equivalent concept to the significant risks described above. Instead, residual risk can be considered to apply to any of the significant risks described above.

Drivers of change in the business environment

The general drivers of change in the business environment, such as climate change and other sustainability factors, that is to say ESG factors (environmental, social, governance), affect the needs and preferences of customers and society. These together with, for example, technological progress and demographic changes may affect demand and supply in the financial sector, which, for its part, will govern the terms and conditions of the new agreements made by OP Financial Group. OP Financial Group reviews external drivers of change to understand the preconditions for the customer's future success. Ensuring such future success is crucial for the Group's future success.

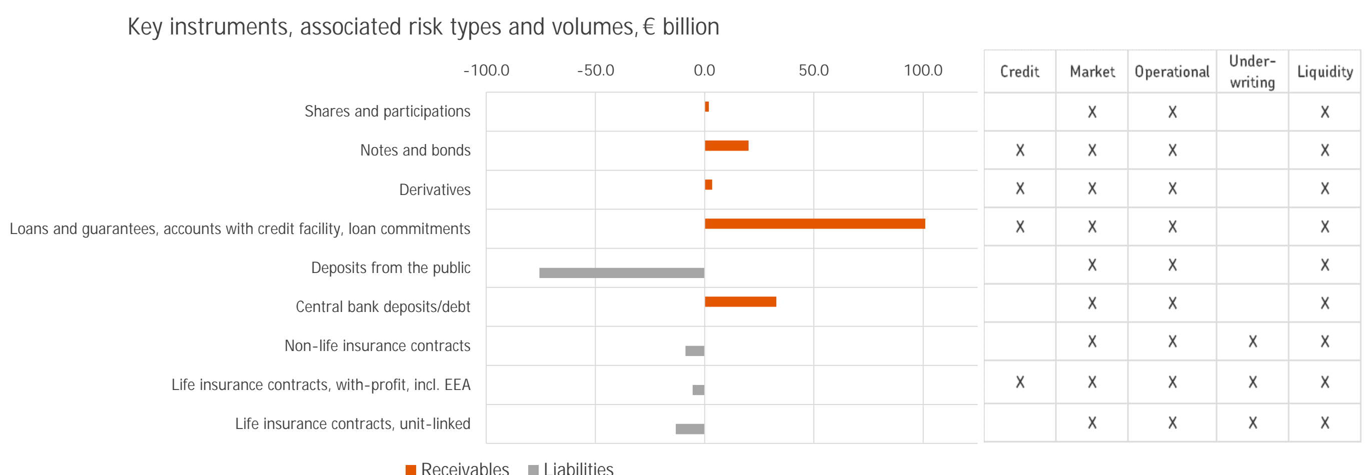
The drivers of change in the business environment as such are not risks but they are channelled into financial risks in the banking and insurance business through various impact chains. In addition to the external drivers of change providing opportunities, they can jeopardise the conditions to operate in some industries. For example, where climate change may contribute to agriculture in Finland and its competitiveness, it may weaken profitability in some industries as a result of change in customer behaviour, lower collateral values in some areas and an increase in regulation-related costs higher than predicted. The abovementioned effects on a credit institution are directly or indirectly reflected, for example, in credit, liquidity, reputational and operational risks.

What is essential is to assess the long-term effect of change in the external business environment. The trend may lead to a change in customer behaviour, which affects demand and the product range. The long-term drivers of change in the business environment may be a threat to business continuity (e.g. the price and availability of funding). The effects of the one and the same driver of change may at the same time be very local and global trends. The effects may provide opportunities on the one hand but can limit the conditions to operate on the other hand.

At customer level, OP Financial Group manages risks by providing customers with advice and monitoring how customer relationship develops. Pricing is based on risks. The ESG projects and/or investments to be financed must be financially sustainable. Attending to the customers' future success ensures that the Group's business remains profitable in the long term too and that the risk buffers for operations are sufficient for capital and liquidity. By providing customers with advice, the Group seeks to generate added value that shows in the customers' better financial standing and wellbeing.

Key instruments and risk types

The graph below describes risk types associated with key financial instruments and illustrates the significance of risk types by means of the balance sheet values of each financial instrument (31 December 2021).



Instrument	Credit	Market	Operational	Under-writing	Liquidity
Shares and participations		X	X		X
Notes and bonds	X	X	X		X
Derivatives	X	X	X		X
Loans and guarantees, accounts with credit facility, loan commitments	X	X	X		X
Deposits from the public		X	X		X
Central bank deposits/debt		X	X		X
Non-life insurance contracts		X	X	X	X
Life insurance contracts, with-profit, incl. EEA	X	X	X	X	X
Life insurance contracts, unit-linked		X	X	X	X

1.1.3.2 Banking risks

Credit risks

OP Financial Group manages its credit risk through the Group-level guidelines and principles and quantitative risk limits. These are specified in Banking risk-taking policy lines, limits and control limits, qualitative and quantitative targets as well principles governing customer selection, collateral and covenants. Quantitative and qualitative target levels balance out the business targets and moderate risk appetite. Limits and control limits set a maximum for risk-taking. These help to ensure the sufficient diversification of the loan portfolio while avoiding the emergence of too large risk concentrations.

Credit risk management is based on careful customer selection, active customer relationship management, good knowledge of customers, strong professional skills and comprehensive documentation. The day-to-day credit process and its effectiveness play a key role in the management of credit risks. The Group also manages credit risk through the selection of the range of products and product terms and conditions. Risk associated with new lending is managed through well thought-out customer selections and the avoidance of risk concentrations. In addition, OP MB makes use of techniques for reducing credit risks (collateral and guarantees). It also makes active use of covenants. Managing risk associated with the loan portfolio is based on good customer relationship management and the proactive and consistent management of problem situations.

The customer's sufficient repayment capacity is a prerequisite for all lending. Creating a group of connected clients properly provides a foundation for credit risk management. Without a clear picture of which parties constitute the group, what the structure of the group is like and what its repayment capacity comprises, it is not possible to get a true picture of the group and understand the risk what lending to the group involves. Each business unit identifies the group of connected clients and their interdependencies and describes them in OP Financial Group's systems.

It is necessary to collect sufficient up-to-date information on customers that cause credit risk to assess their creditworthiness. Creditworthiness comes from the customer's willingness to pay and repayment capacity. They both affect the customer's rating grade. Sufficient and correct basic information is used to ensure that the customer can be rated with a correct credit rating model and that the rating grade gives a true picture of the customer's creditworthiness risk. Each business unit ensures that its customers' rating grades are constantly valid and up to date and, if necessary, updates the grade if the customer's situation changes. This is how the loan portfolio of the bank concerned and the entire OP Financial Group can be monitored on a real-time basis.

Collateral management is based on an independent collateral assessment, the validity of pledges and the fact that the collateral can be realised so that we can continuously maintain a realistic view of the hard collateral securities that secure receivables. The values of assets pledged in security of receivables must give a true and real-time picture of the collateral position related not only to an individual customer but also the entire loan portfolio. When valuing illiquid collateral securities, it is necessary to consider the financial standing of the collateral asset owner. The weaker is the asset owner's financial standing, the bigger should be the weight of the realisation value in estimating the collateral asset.

Financing decision-making is based on the principle of segregation under which the person preparing financing may not make the financing decision alone. Considering that financing decisions are about risk-taking decisions, those making such decisions must have all information relevant to decision-making. All credit risk decisions are made on a business-specific basis. Decision-making is guided by OP Financial Group's Risk Appetite Statement (RAS) and the target risk exposure specified in the risk policy. Decisions that deviate from the target risk status specified in the risk policy must be explained on a broader basis. The central cooperative's Risk Management assesses compliance of the most significant financing projects with the risk policy and reports to the management of OP Financial Group and the management of Group banking entities a situational picture of compliance with the risk policy.

The bank's senior management and management body monitor closely the bank's credit risk exposure. The bank's management is responsible for keeping the members of the management body informed in the event that the bank's operational risk-taking deviates from the risk policy approved by the management body, in order for the Board of

Directors, as its role requires, to monitor the trend in the bank's risk exposure and, if necessary, issue instructions to the management at operational level concerning risk-taking.

From the bank's perspective, credit risk materialises in a situation where the customer becomes insolvent and cannot fulfil their credit obligations without the bank taking measures, such as realising collateral. It is therefore important that customers whose repayment capacity has weakened or a significant threat is posed to their repayment capacity are promptly identified in both the financing process and the customer relationship management process.

Customers that are most significant to the bank and whose risk of default has increased clearly or another significant threat is related to their repayment capacity must be placed under special control. For these customers, the bank must prepare an action plan on what measures should be taken to resolve the customer' situation from the bank's perspective and to minimise the risk the bank may be exposed if materialised. Monitoring and documenting potential customers in default or actual customer in default are more intensive and extensive than among less risky customers, so that the bank is actively aware of changes in the customer's situation and can immediately react to the changed situation.

Measuring credit risk

OP Financial Group measures credit risk using the ratio of economic capital requirement for credit risk to exposures at default, the ratio of non-performing receivables to the loan and guarantee portfolio and the ratio of expected credit losses to the loan and guarantee portfolio. What is also measured is the proportion of corporate exposures in different rating grade baskets, and the average rating of corporate exposure. The risk policy sets limits for these metrics. In addition, loan portfolio concentrations are monitored by customer, industry and country. The Group also measures the growth differential of the loan portfolio and credit risk economic capital to ensure a balance between growth and risk-taking. Limits deriving from Group-level limits have been set for the business segments engaged in banking.

Limits set in the risk policy can be supplemented with qualitative targets set in the operating instructions of each segment that may be segment- or entity-specific. Targets may be set for the entire loan portfolio or separately to personal or corporate customer financing. Furthermore, it is possible set targets measuring the quality of the credit risk process.

In order to ensure sufficient diversification of the loan portfolio and efficient capital allocation, customer segmentation is used to manage the loan portfolio. Customer segments have been defined to ensure that receivables in each individual segment are homogenous in terms of credit risk to enable a coordinated risk policy. By utilising segmentation and the breakdown by rating grade, the Group presents the loan portfolio target status in the risk policy, which is not binding on the business unit concerned but the business unit should control credit risk-taking in such a way that the target state will be achieved.

OP Financial Group utilises internal credit risk models in risk assessment. In addition to the models used for assessing probability of default (PD), the Group uses models for predicting loss given default (LGD) and exposure at default (EAD) to measure credit risk. Exposure at Default (EAD) refers to the estimated amount of the bank's receivable from the customer at default. Off-balance-sheet exposures at default are determined on the basis of the conversion factor (CF). Loss Given Default (LGD) is an estimate of a financial loss incurred by the bank, as a share of EAD, if the customer defaults. Procedures based on model risk management are applied to the models used in credit risk assessment.

OP Financial Group's internal credit rating system

Rating means models, methods, processes, supervision, data collection and IT systems that support credit risk management, credit risk assessment, the assignment of exposures to rating grades or pools, and the quantification of default and loss estimates that have been developed for certain types of exposures. OP Financial Group's rating system applies to all Group entities. The Board of Directors of OP Cooperative considers and approves the credit rating principles as part of the Risk Appetite Framework document.

OP Financial Group uses an internal 16-level scale of A–F to assess the probability of default for its **personal customer** agreements, with F representing borrowers in default. The Group assesses monthly all personal customer agreements' PD using a loan portfolio rating model. The loan portfolio rating is based on a customer's basic data, payment behaviour and other transaction history data. Average PDs have been calculated for each rating grade for a period of 12 months.

The rating based on the application stage for now supports the loan approval process, credit risk assessment and the pricing of new loans. OP cooperative banks and the Group's asset and sales finance solutions and unsecured consumer loans have their own application stage models.

The probability of default of **corporate customers** is assessed using the 20-level credit rating system on a scale of 1.0–12.0, with 11–12 rating grades representing customers in default.

The R rating for mid-size and large corporate customers is based on the company's financial indicators and qualitative background data on the basis of which a statistical model generates a proposal for rating. An expert familiar with the customer will make a rating proposal on the basis of what is suggested by the model and of any other information available. Any changes and uncertainties relating to the future outlook will be regarded as warning signs and exceptions to the rating provided by the model. The rating grade is determined by the central cooperative's independent Risk Management, based on the rating proposal, at least once a year and, in respect of weak customers, on a half yearly basis.

Suomen Asiakatieto's automated rating model, Rating Alfa, forms the basis of small corporate customers' A rating. The rating Alfa variables include information on payment default and payment practices of the company and its persons in charge, key indicators based on financial statements and the customer's basic data. The rating Alfa risk scores and OP Financial Group's internal payment behaviour data resulting in default are used to generate OP Financial Group's rating grades that will be changed based on expert assessments, if need be. The banks must at least once a year assess the validity of the rating grade of A rated customers and they must assess customers with a low rating grade and those on the watch list on a half-yearly basis. Responsibility for the assessment rests with the bank in charge. The rating grade for the most significant A rated customers is approved by the central cooperative's Risk Management.

Low exposure corporate customers are rated using a rating model for low exposures (P). The rating model is an automated rating model calculated on a monthly basis that is created on the basis of the customer's basic data, transaction data and payment behaviour data.

OP Financial Group uses a 20-level credit rating system on a scale of 1.0–12.0, with 11–12 rating grades representing customers in default, to assess the probability of default of **credit institution counterparties.**

A specific L rating model is used to assess the probability of default of credit institutions as counterparties, the structure of which corresponds to the R rating model for companies. The statistical model as the basis of the credit rating is based on financial indicators in financial statements and on qualitative background data. Such rating can be revised by an expert with warning signs and, in many cases, rating is also affected by the parent company's support to the banking group and by the Sovereign Ceiling rule whereby the counterparty cannot be better than the country concerned in terms of creditworthiness. OP Financial Group decides on credit institution ratings at least once a year.

Risk Management maintains a more detailed description of the internal credit rating system and reports regularly on its effectiveness as part of OP Financial Group's risk analysis and separately to the Risk Management Committee of the Executive Management Team.

Liquidity risks

Identifying liquidity risks

OP Financial Group's Treasury and other business units plus Risk Management continuously identify and assess risks associated with funding and business and other business environment. In the risk assessment of new products, services, business models, processes and systems, every business unit must take account of liquidity risks, too. At least once a year, Risk Management together with the representatives of the business concerned make a comprehensive liquidity risk assessment to ensure that the capital adequacy assessment process (ILAAP) is appropriate and adequate in relation to the Group's liquidity risks.

OP Financial Group's key source of liquidity risk is banking where inflows and outflows of financing does not take place at the same time. In such a case, the bank is exposed to refinancing risk due mainly to lending with a long maturity and the differences between the maturity of deposit funding dependent on customer behaviour and the illiquidity of receivables. At

the same time, the bank is exposed to funding concentration risk as regards the counterparties of deposit and wholesale funding, availability and maturity of finance. Lack of market liquidity may reduce liquid assets held by the bank.

Assessment and measurement

The Group assesses the future cash flows of receivables, liabilities and off-balance-sheet commitments based on the contract maturity date or repayment programme, expert assessments or statistical models based on customer behaviour history.

Structural funding risk is measured on the difference between cash inflows and cash outflows in different maturities. In addition, the Group calculates the regulatory Net Stable Funding Ratio (NSFR) which determines the amount of stable funding sources expected to span over one year in proportion to assets requiring stable funding.

From the perspective of the relevant authority, funding liquidity risk is measured using the Liquidity Coverage Ratio (LCR). The sufficiency of the liquidity requirement in terms of time is assessed though maturing items on the balance sheet, wherein agreements are not renewed but ended at maturity. Based on a financial perspective, the Group measures the sufficiency of the liquidity buffer based on stress testing.

OP Financial Group measures funding concentration risk by calculating the amount of bond funding with a maturity of 12 months and rolling 3 months. In the time horizon of less than 12 months, the Group measures the total wholesale funding amount, comprising short- and long-term wholesale funding, for 3 months. When it comes to deposit funding, the Group monitors the concentration of the largest deposit volumes. Concentrations by counterparty and instrument are also subject to monitoring.

OP MB measures its asset encumbrance by proportioning encumbered assets to the aggregate amount of balance sheet assets and collateral securities.

Risk assessment and measurement methods related to liquidity buffer investments are described as part of market risks.

Liquidity stress testing

The adequacy of OP Financial Group's liquidity buffer and buffer items is assessed through various scenarios. OP Financial Group-specific and market-specific scenarios as well as their combination are used as stress scenarios. The scenarios must cover both short- and long-term stress conditions. When measuring member bank-specific structural funding risk, the liquidity requirement based on the regulatory stress scenario is counted as a deposit in Treasury on a bank-specific basis. A reverse stress test is used in connection with the Group's Recovery Plan. Senior management confirms the scenarios to be used, use and reporting of stress test results.

Funding plan

In its funding plan, OP Financial Group must take account of its member banks' estimate of the funding need for years to come. The funding plan defines guidelines for wholesale funding for the next few years. Implementation of the plan is monitored regularly and the plan is updated, where needed, during the year. Deposit funding is primarily based on the business strategy and plan. The funding plan specifies the sources of wholesale funding and presents how the Group covers its need for the most important wholesale funding sources in view of the depth of the market and sufficient diversification, as well as defines decision-making powers. The funding plan must also take account of unfavourable scenarios lasting several years and of abrupt changes in key funding items.

Non-euro liquidity management

OP Financial Group carries out non-euro funding due to the diversification of funding sources. Since almost all the Group's receivables are in euros, the Group mainly converts its non-euro funding into euros through derivative transactions in connection with an issue.

According to liquidity regulation, a non-euro currency is significant if non-euro liabilities account for over 5% of the amalgamation's balance sheet total. The Group monitors significant currencies every month when it produces its liquidity

report to the supervisor. Foreign currencies account for only a small proportion of the balance sheet and the liquidity risk due to currency availability has been minimised by the operating model.

Management of intraday liquidity

OP Financial Group's Treasury monitors intraday funding sources and anticipates and monitors the execution of intraday payments. The Group holds intraday funding sources to the amount that it can make payments due on the banking day.

Based on the liquidity contingency plan, the Group can raise its level of preparedness even if intraday liquidity is disturbed in order to ensure efficient operations in the case of an increased threat of a crisis.

Liquidity buffer

From the financial perspective, the liquidity buffer consists of deposits in the Bank of Finland and unencumbered notes and bonds eligible as collateral for central bank refinancing held by OP Corporate Bank. It also includes other notes and bonds marketable on the secondary market and unencumbered corporate loans eligible as collateral for central bank refinancing.

From the regulatory perspective, OP Financial Group's liquidity buffer consists of the liquidity buffer that fulfils the criteria for liquidity buffer requirement provisions (LCR buffer).

The Group's Treasury is responsible for preparing the investment plan at least once a year. The bond investments in the liquidity buffer held by the Treasury are included in it. OP Corporate Bank's Board of Directors approves the plan. The investment plan applies the restrictions and objectives set in OP Financial Group's Risk Appetite Statement (RAS) and Risk Policy for market risk, credit risk and funding liquidity risk. The investment plan establishes, to the appropriate extent, a framework for testing the liquidity of notes and bonds.

The Group diversifies investments, for example, by product, counterparty and country, in view of both internal risk appetite and external regulatory requirements.

Collateral management and asset encumbrance

Collateral securities in this context mean OP Financial Group's assets that are used as collateral to fulfil liquidity needs either in normal conditions or in stress conditions. On a centralised basis, Group Treasury monitors collateral and is responsible for its use and transfer.

Home loans serving as collateral for covered bonds issued by OP Mortgage Bank constitute the largest source of asset encumbrance in the balance sheet. In addition, central bank operations and derivatives business are mainly other sources of asset encumbrance. From the perspective of preparing for liquidity needs, the Group restricts asset encumbrance through quantitative limits specified in its Risk Policy.

To increase liquidity potential, it is necessary to identify the eligibility of the balance sheet receivables as collateral and create readiness to use receivables as collateral.

Securing liquidity in stress conditions

OP Financial Group's liquidity contingency plan establishes a framework that safeguards the Group's ability to meet its payment obligations during a liquidity crisis as well. The plan provides well-defined operational guidelines and operating models for identifying an increased liquidity risk while directing OP Financial Group to timely and appropriate actions to reduce liquidity risk by ensuring efficient organisation and activities in case a threat of crisis is imminent. The contingency plan specifies control and monitoring practices for each liquidity level, which become more rigorous when moving up to the next level.

Furthermore, OP Financial Group's Recovery Plan includes liquidity management recovery measures.

Liquidity risk reporting

The Group reports liquidity risks to the central cooperative's management on a regular basis and, with a heightened threshold level of the liquidity status, will adopt weekly or daily progress reporting practices whenever necessary. OP

Financial Group companies report liquidity risks to their boards of directors regularly, applying at least the level which has been set for control limits and limits.

As part of OP Financial Group's risk analysis, Risk Management reports quarterly to the Risk Committee, which operates under the central cooperative's Board of Directors, on the implementation of the liquidity strategy and the Banking risk policy lines. The report involves primarily assessing funding changes at amalgamation level relative to the customer business funding need and changes in deposits and wholesale funding and related customer behaviour. Through stress tests, reporting also assesses the short-term and long-term sufficiency of internal liquidity buffers, the funding structure of banking and changes in regulatory requirements.

The functionality of the models utilised in liquidity risk management is ensured as specified in the principles of model risk management described as part of model risks.

Liquidity management and control within the amalgamation

Liquidity regulation as such is not applied to the amalgamation's companies but, with the ECB's permission, the central cooperative may give special permission to its member banks to deviate from the liquidity regulation. As the central institution of the amalgamation of cooperative banks, OP Cooperative has granted its member credit institutions special permission, under the Act on the Amalgamation of Deposit Banks, pursuant to which the liquidity requirements set for credit institutions mentioned in Part VI of the EU Capital Requirements Regulation are not applied to the member credit institutions. Liquidity based on the regulation is subject to supervision and reporting at the level of the cooperative banks' amalgamation. The prerequisite for the special permission is that the central cooperative gives the amalgamation's companies instructions on risk management needed to secure liquidity and other qualitative requirements, and supervises compliance with these instructions.

The central cooperative senior management is responsible for organising OP Financial Group's centralised liquidity risk management according to the liquidity strategy policy lines. It must ensure that the management and supervision of the amalgamation's liquidity management is at all times in accordance with the extent and quality of business and fulfils regulatory requirements. In the sales control of borrowing and lending, the management pays attention not only to growth and profitability targets but also to liquidity features. Product development related to customer service must also aim to reduce risks associated with the liquidity and funding structure.

OP Financial Group's liquidity and wholesale funding plan and authorisations to raise capital on the financial markets are subject to approval by the Boards of Directors of OP Corporate Bank and OP Mortgage Bank. The central cooperative's senior management approves the Liquidity Contingency Plan which contains the control and supervision procedures of the liquidity status based on various threshold levels as well as funding sources.

As OP Financial Group's treasury, OP Corporate Bank plc is tasked with securing the liquidity of the entire Group and each OP cooperative bank or Group company. The Group puts its entities' liquidity into its Treasury's cheque account with the Bank of Finland. This means that the Group always manages its overall liquidity position through the account on a centralised basis. OP Financial Group's Treasury is in charge of the Group's wholesale funding, manages the Group's short-term liquidity, maintains the liquidity buffer, manages the Group's minimum reserve on a centralised basis and is responsible for managing intraday liquidity risk. OP Corporate Bank manages on a centralised basis the Group's wholesale funding in the form of debt capital and equity capital, while OP Mortgage Bank manages wholesale funding based on covered bonds.

Based on the decision by the Board of Directors or a body it has authorised, Group Treasury may use the collateral securities in the entire OP Financial Group in a normal circumstance. In a severe liquidity crisis caused by money and capital market disruptions or by other reasons or in preparing for it the central cooperative's Board of Directors, or a body it has authorised, obliges the amalgamation's member banks to either sell loans to OP Mortgage Bank or to place part of their loan portfolio as collateral for the covered bond issued by OP Mortgage Bank through an intermediary loan. The amounts of the loans to be needed are based on the Group-level need and are determined for each bank. The decision may be put into practice based on a decision made by the central cooperative's Board of Directors or a body it has authorised. Member banks are committed to immediately executing the measures related to the decision.

The primary funding sources of OP cooperative banks' lending include equity capital, deposit funding and funding for intermediary loans from OP Mortgage Bank. The use of intermediary loans reduces the need for OP Financial Group's senior funding.

If surplus liquidity emerges in an OP cooperative bank's customer business, it will be channelled to investment products provided by the Group's Treasury to support the implementation of the entire OP Financial Group's mission. Investment is not counted among the basic tasks of OP cooperative banks.

Allocation of liquidity risk costs within the amalgamation

The costs of wholesale funding and liquidity buffer maintenance are allocated among member banks based on the matching principle adopted by the central cooperative senior management. The costs of liquidity maintenance are allocated through liquidity deposits and the costs of wholesale funding are allocated through the margin added to the base rate of OP Financial Group's loans/deposits, or by using another practice.

The costs of external wholesale funding must be reflected in the pricing of customer business.

Market risks

Interest Rate Risk in the Banking Book (IRRBB) management strategy

Around a third of OP Financial Group's income is based on net interest income. Consequently, the strategy of the management of the interest rate risk in the banking book forms a key component in ensuring the Group's earnings stability. As part of market risk, the interest rate risk in the banking book has been defined as one of OP Financial Group's significant risks.

The banking book comprises on- and off-balance sheet items of OP Financial Group's banking that have not been determined to be included in items within the trading book. Interest rate risk in the banking book is a structural interest rate risk which emerges due to the nature of a business. The interest rate risk in the banking book is hedged using products offered by Group Treasury. Each member bank must demonstrate adequate knowledge of using derivatives for hedging purposes.

Interest rate risk in the banking book is limited to a level that avoids setting too great a short-term or long-term interest rate risk in relation to each member bank's risk-bearing capacity.

The principles governing the management of the interest rate risk in the banking book establish the conditions for the fulfilment of the new regulatory requirements applying to IRRBB (Interest Rate Risk in the Banking Book). Accordingly:

- The senior management is responsible for arranging the management of interest rate risks in the banking book in OP Financial Group's banking in accordance with the principles of the interest rate risk management strategy.
- The interest rate risk management practices are justified, solid and documented.
- Each member bank in the amalgamation bears the interest rate risk in its banking book and is responsible for managing it.
- Optionalities included in assets and liabilities are taken into account in the models used to measure interest rate risk. The functionality of the models is ensured as specified in the principles of the model risk management described as part of model risks.
- Interest rate risk is measured against changes in the level of the yield curve and in stress tests against changes in the yield curve shape.
- The interest income risk metric is used to measure interest income risk, and the present value risk metric to measure interest risk of the on- and off-balance sheet items over their entire term to maturity.
- Economic capital is allocated for interest rate risk in the banking book in relation to interest rate risk.
- OP Financial Group carries out stress tests on the interest rate risk on a regular basis.
- Few fixed-rate loans have been issued at the moment. Because receivables are chiefly based on floating reference interest rates, the bank's earnings do not markedly depend on the difference between long and short-term rates. However, the bank's earnings could partly be based on the difference between long and short-term interest rates to a greater extent within the current interest rate limits.

Each member bank manages interest rate risk in the banking book within the scope of the risk policy and limits, other guidelines and targets issued by the central cooperative, and the terms and conditions of accounts, deposits and loans. As part of their annual planning, member banks prepare an ALM plan that includes a management plan for their interest rate risk in the banking book.

Using the risk assessment procedure applied to OP Financial Group's new products, services, operating models, processes and systems ensures that the characteristics of interest rate risk management have been understood and described appropriately.

Based on the loan terms and conditions, the minimum reference rate of zero is applied to a considerable number of loans. In technical terms, zero floors are assessed to remain with high probability because there has not been any discussion on abandoning it within the sector and in public. The removal of zero floors would require a legislative amendment defining how customers are compensated for the negative reference interest rate and how it is treated in taxation. Stress tests are used to assess the effects of the removal of zero floors.

Equity capital is considered an item that finances business. Interest on Profit Shares is taken into account in risk calculation, according to customer promise and the contract rate of subordinate loans. Share capital, cooperative capital and retained earnings are all free of interest.

The central cooperative ensures that the interest rate risk transfer reflects in the financial statements of the Group and its major companies in accordance with the nature of business through centralised hedge accounting.

As part of OP Financial Group's risk analysis, Risk Management reports quarterly to the Risk Committee, which operates under the central cooperative's Board of Directors, on the implementation of the Banking risk policy.

Management of other market risks in Banking through the balance sheet

Other market risks associated with revenue logic arising from banking through the balance sheet are chiefly due to the management of OP Financial Group's liquidity buffer and OP Corporate Bank's portfolio of bonds.

OP Corporate Bank's Group Treasury manages OP Financial Group's banking liquidity buffer. The regulatory liquidity coverage ratio (LCR) determines the constraints on the size and allocation of the liquidity buffer. Alongside Group Treasury deposits, the liquidity buffer contains the liquidity buffer portfolio, and items in the liquidity buffer portfolio must conform to the regulatory creditworthiness and liquidity requirements. For this reason, the portfolio includes securities carrying a very low likelihood of credit losses materialising. Most often, these securities have fixed interest rates, so their value varies depending on movements in market rates and credit spreads. A decision has been taken to recognise the securities in the portfolio at fair value through other comprehensive income, so changes in the value of these securities are recognised in the fair value reserve included in the capital base. Such changes have therefore an impact on capital adequacy.

The liquidity buffer portfolio is monitored and managed using market risk management methods:

- The earnings of the liquidity buffer portfolio are based on covering credit spread and liquidity risk. Derivatives are used to hedge interest rate risk. Derivative transactions can be executed within OP Corporate Bank, whereupon the interest rate risk is transferred for management by the Group Treasury.
- The Banking risk policy determines the risk measurement methods and risk-taking limits, as well as other restrictions.
- An investment plan is prepared for the investment portfolio, describing the goals of investment activities and the principles of portfolio management. OP Corporate Bank's Board of Directors approves the investment plan. Short-term investments in local authority papers can be made in addition to the investments described in the investment plan.
- OP Corporate Bank ensures sufficient portfolio diversification by means of restrictions by issuer.

In addition, OP Corporate Bank invests in corporate bonds. OP Corporate Bank's bond portfolio is OP Corporate Bank's equivalent to lending. An investment plan is prepared for each portfolio, describing the goals of investment activities and the principles of portfolio management.

The Group manages equity and real estate risk in Banking primarily through instructions which strictly limit risk-taking. Real estate risk chiefly involves real property units used by OP cooperative banks. The current Banking business models do not call for an increase in equity or real estate risk.

In car dealer financing, OP can offer products where the risk of the car's resale value at the end of the contract period is borne by OP Corporate Bank. If the actual selling prices is less than the estimate used in the pricing of the contract, the revenue will be lower than targeted or a loss is made. To manage risks, it is important to limit the financed assets so that their prices can be predicted and their realisation goes smoothly.

Risk management in Markets

OP Financial Group's trading in capital market products has been centralised in OP Corporate Bank's Markets function. This includes the price setting and market hedging of interest rate hedging products for loans granted by OP cooperative banks and OP Corporate Bank, separate interest rate hedges, foreign exchange trading, structured investment products, trading in bonds and commodity derivatives. Risks taken include interest rate risk in various currencies, currency risk, volatility risk of options, credit spread risk and counterparty risk. Repurchases of structured investment products also generate a degree of equity risk. Markets is responsible for managing the Group's currency exposure and does foreign exchange transactions on the market according to needs. Markets manages risk exposures by actively trading on the market. Markets monitors risks and earnings on a daily basis. In addition, Risk Management reports Markets' risks to the Board of Directors' Risk Committee and the senior management, as a part of OP Financial Group's risk analysis.

Markets' risks are measured using the expected shortfall measure, as well as various sensitivity and nominal value metrics for specific products and positions. The impacts of market movements that are significant to the business are assessed via stress tests. This is important in order to understand the risks of rare market movements and those with a major impact. The market risks borne by Markets are included in the economic capital requirement. The risk policy sets limits and frameworks for business models. The risk policy is prepared in such a way that the risks are visible for each business model and any risk-taking that goes beyond the business model is strictly limited.

Counterparty risk arises from entry into derivative contracts, which is controlled by applying customer-specific limits. OP Corporate Bank's credit decision process decides on the limits. To take account of the risk, the Group adjusts the valuations of derivatives using Credit Valuation Adjustment (CVA and DVA). The size of the valuation adjustment is affected by the credit-risk-free valuation of derivatives, interest rates, volatility of interest rate options, exchange rates, and credit risk market price. Fluctuations in adjustments to the value of credit risk due to the valuation adjustment are mitigated by entering into derivative contracts.

Risks arising from interest-rate hedges linked to loans are transferred to Markets, which covers them on the market. Risks associated with operations include interest rate and volatility risk. In some products, the forecast client behaviour has a significant effect on the pricing of the product and risk hedging. If, on the whole, the client's behaviour differs significantly from the predicted one, the realised client return may be lower or higher than expected and the risk exposure is over-hedged or under-hedged. Client behaviour risk differs from market risks in that the risk cannot be hedged on inter-bank markets. Risk management is based on OP cooperative banks' client relationship management, real-time monitoring of client behaviour and the use of accumulated data in the development of forecast models.

Risk management for the Asset Management business model

The most important risks associated with Asset Management are the operational and compliance risks related to the arrangement of operations. The sale of asset management products is subject to detailed regulation seeking to ensure that clients understand the risks, costs and environmental and social impacts of their investment decisions. The sale of investment products carries a reputational risk. The effect of market developments on assets under management exposes to market risks involved in the revenue earned by business.

Risks are managed by improving the quality of processes and ensuring that the product offering corresponds to client demand and needs. A diverse product offering improves customer retention in a situation where clients want to switch or diverse their investment products. A capital requirement is set for risks within the risk type, Other assessable risks.

As part of OP Financial Group's risk analysis, the Compliance organisation reports on compliance risks and Risk Management reports on other risks associated with the Asset Management revenue generation models to the Risk Committee of the Board of Directors and the senior management.

1.1.3.3 Risks of insurance operations

Life insurance risks

Biometric risks associated with life insurance products occur when death or disability causes higher claim payouts than expected or longer periods of pension disbursements than expected. Mortality and life expectancy affect a life insurance company's risk exposure in pure life insurance policies and pension policies. Longevity risk is particularly significant for group pension insurance policies under a defined benefit plan and in other portfolios of lifelong pensions, because these contracts do not contain any significant mortality risk to counterbalance the risk exposure.

The policyholders' customer behaviour may give rise to lapse risk and surrender risk. Policyholders have the right to stop paying their premiums, terminate the contract early, or change the contract if there is an option provided for this; this will result in higher risk for the company. One example of such options is the customer's right to change the profit type of their assets from unit-linked to one with technical interest, which increases interest expenses. Another example is the postponement of pension, which increases the longevity risk and lapse risk. Endowment policies and capital redemption contracts with the right of surrender as well as term life policies, which the policyholder can terminate anytime, are particularly susceptible to surrender risk related to customer behaviour. Surrender of pension insurance is possible only in exceptional circumstances.

Expense risk refers to a situation in which incurred insurance contract management, maintenance and claims management expenses differ from those estimated in rating. The early lapse of insurance policies may also jeopardise the accuracy of cost assumptions used for rating and thereby contribute to the materialisation of the cost risk.

OP Financial Group assesses the need for capital required by life insurance underwriting risks by applying the Solvency Capital Requirement (SCR) and the economic capital requirement. Stress tests are used to supplement the assessment.

OP Financial Group manages life insurance underwriting risks by means of strict risk selection and pricing and by ensuring that insurance liabilities are accurate and sufficient. The customer and risk selection policies are described in the customer and risk selection guidelines, which are updated frequently.

Risks related to mortality and longevity are priced in a secure way on the basis of the conditions and situation prevailing when the policy is issued. The company may change the prices of these long-term contracts to a very limited extent. This is why the risk for any later changes in the premium rating bases will be borne by the insurance company so that the premiums of new policies are increased and the company records an insurance liability supplement to sold policies. Offering insurance policies that have opposite risk exposures reduces the net risk of the entire insurance portfolio.

Early lapse risks related to customer behaviour and the risk of customers exercising their option to change the profit type of their assets to a guaranteed-interest model are managed through a competitive range of products, suitable product structures, and incentives and sanctions in the contract terms and conditions.

The central cooperative consolidated manages expense risks through adequate cost control and prudent pricing. OP Financial Group monitors regularly the realisation of assumptions made with regard to rating and, if necessary, increases the premiums of new policies and records a supplement to insurance liabilities with regard to the sold policies.

OP Financial Group also uses reinsurance to mitigate the risk. The reinsurance level is determined in the reinsurance principles approved by OP Life Assurance Company's board of directors. The reinsurance principles set limits for the maximum retention and catastrophe protection capacity. The reinsurance principles also restrict the authority to take reinsurance counterparty risk because the document sets limits based on the counterparty's rating grade and the reinsurance contract type (contract business, facultative).

The actuary in charge annually makes the company's board of directors a statement of continuous compliance with the insurance liability requirements, the requirements set by the nature of the underwriting business and the opinions given by the actuarial analysis function on the insurance policy and reinsurance arrangements.

OP Financial Group limits the economic capital requirement tied up in underwriting risks relative to its internal capital. Underwriting risks are, for their part, also guided by a target set in the capital plan for own funds and the requirement for solvency capital.

Non-life insurance risks

The insurance business is based on taking and managing risks. The largest insurance risks pertain to risk selection and pricing, the acquisition of reinsurance cover and the adequacy of insurance liabilities. In non-life insurance, the risk inherent in insurance liabilities lies mainly in insurance lines characterised by a long claims settlement period. Biometric risks also arise from granting non-life policies where the non-life insurer pays annuities stemming from non-life obligations as a result of an insurance event.

OP Financial Group assesses non-life insurance underwriting risks by applying the Solvency Capital Requirement (SCR) and the economic capital requirement. Stress tests are used to supplement the assessment.

OP Financial Group manages non-life insurance underwriting risks by means of strict risk selection and pricing and by ensuring that insurance liabilities are accurate and sufficient.

Premium rating is based on risk correlation, i.e. the insurance risk premium corresponds to at least the claims incurred from the insurance. The insurance premium also includes components for operating expenses and capital cost.

The bases for risk selection (customer selection and related criteria, as well as decision-making limits by insurance line) are specified in the risk policy, which is updated annually, and the guidelines, which supplement the risk policy. The documents specify decision-making powers on a multistage basis according to the size of underwriting risk, as well as risks by insurance line underwritten only to a limited extent and at the discretion of the Insurance Customers Management Team.

The insurance periods within non-life insurance are one year or less, and changes in the underwriting risk level can usually be passed quickly onto insurance premiums. In respect of long-term insurance lines where risk inter-independence does not perhaps materialise, risk is managed by setting underwriting limits.

The Group also uses reinsurance to mitigate the risk. The reinsurance level is determined in the reinsurance principles approved by the Boards of Directors. Reinsurance is implemented mainly through risk-specific (insured object) and loss-event-specific reinsurance cover. The Group eliminates potential gaps in the reinsurance cover by using detailed underwriting guidelines. The risk arising from reinsurance availability is subject to strict supervision. Irrespective of the insurance line, large individual risks, such as claim accumulations arising from natural disasters or human activity, are reinsured.

The reinsurance principles set limits for the maximum retention and catastrophe protection capacity. The reinsurance principles also restrict authorisations to take reinsurance counterparty risk because the document sets limits based on the counterparty's rating grade and the reinsurance contract type (contract business, facultative, fronting). Local risk concentrations are included in the Estimated Maximum Loss (EML) for property and business interruption risks and through EML breakthrough cover included in reinsurance cover.

The amount of insurance liabilities is estimated securely in such a way that it would be sufficient to fulfil the obligations arising from insurance contracts. This is performed by first estimating the expected value for insurance liabilities, and then determining a safety loading based on the degree of uncertainty. The actuary in charge annually makes the company's board of directors a statement of continuous compliance with the insurance liability requirements, the requirements set by the nature of the underwriting business and the opinions given by the actuarial analysis function on the insurance policy and reinsurance arrangements.

OP Financial Group limits the economic capital requirement tied up in underwriting risks relative to the Group's internal capital. Underwriting risks are, for their part, also restricted by a target set in the capital plan for own funds and the requirement for solvency capital.

Market and counterparty risk management in life and non-life insurance

Management of structural interest rate risk and other investment risks

The management of market risks in life and non-life insurance covers all of the market risks on the balance sheet, consisting of insurance liabilities, investments and derivatives. Investment operations aim to ensure customer income, obtain assets covering insurance liabilities, and invest profitably to generate returns.

An analysis of structural interest rate risk – interest rate risk on the balance sheet – begins by assessing how well the cash flows from fixed income investments and insurance liability match each other (Asset and Liability Management, ALM). Interest rate movements affect the value of insurance liabilities as well as investments and hedging derivatives.

In the Solvency II framework and the economic capital requirement model, the insurance liability discounting curve includes a volatility adjustment, which also exposes to credit spread risk on the balance sheet in terms of structural interest rate risk. A decrease in interest rates and the narrowing of credit spreads cause the present value of insurance liabilities to increase. In respect of the level of the credit spread related to interest rate risk on the balance sheet, the consistency of the risk profiles of assets and liabilities is essential. Insurance liabilities can be hedged against interest rate risks using direct fixed income investments and interest rate derivatives such that the net interest rate risk consists of the interest rate risk associated with insurance liabilities and the risk profiles of the fixed-income investments and hedging derivatives used to cover the insurance liabilities.

Investment operations take account of factors such as the structural interest rate risk arising from the cash flow structure of insurance liabilities, and the other requirements that insurance liabilities impose on investment assets and their liquidity. Application of the principle of equity in life insurance also affects investment targets and the amount of risk taken.

The magnitude of market risks is measured and limited by the Value at Risk metric and various sensitivity indicators, as well as the amount of the economic capital requirement and the solvency capital requirement (SCR). Stress tests are used to supplement the assessment. Insurance companies' risk concentrations within asset classes are assessed by examining the asset class allocation distribution.

Market risks associated with interest rate risk on the balance sheet are managed using limits on market and concentration risks as specified in the investment plans approved by the company's Board of Directors in line with the risk policies for each revenue logic. Asset class limits are set for liquid and illiquid investments. Separate investment plans are prepared for the life insurance portfolio (ETA 1) and the pension insurance portfolio (ETA 2) transferred from Suomi Mutual Life Assurance Company to OP Life Assurance Company. The boards of directors of the insurance companies also approve principles for the use of derivatives for inclusion in the investment plans. In addition to the Group's risk policy lines and limits, the investment portfolios are also restricted by the responsible investment principles confirmed by the companies' boards of directors.

The insurance companies' insurance liabilities do not, in principle, cause currency risks because their insurance liabilities are normally denominated in euros. For OP Life Assurance Company, all insurance liabilities are denominated in euros. For this reason, a substantial proportion of the investments covering insurance liabilities are allocated to euro-denominated securities.

Counterparty risk management

The counterparty risk of reinsurers is managed using limits for specific rating grades and counterparties in accordance with investment plans and the reinsurance principles confirmed by the Board of Directors.

Counterparty risk in the investment portfolio is restricted by allocation limits for specified rating grades.

Capital is reserved for counterparty risks in the economic capital requirement model and the SCR measurement.

1.1.3.4 Group-level risks

Operational risks

Management of operational risks

Operational risk means a risk of an adverse consequence caused by all business operations that may result from insufficient or incorrect practices, processes, systems or external factors. Operational risk may materialise in the form of financial losses or other harmful consequences, such as deterioration or loss of reputation or trust.

OP Financial Group's operational risks also include ICT and security risks. Operational risks also include data capital, compliance and model risks, which have been categorised in a separate risk types due to their special features.

Operational risk management in business

Operational risk management aims to ensure the efficiency and quality of key business processes and functions, as well as their continuity in abnormal circumstances. Every OP Financial Group company's management and process owners is responsible for organising operational risk management according to the abovementioned goals and in view of the special features of each business.

Through operational risk management, companies' management and process owners ensure that risks do not lead to unforeseen financial losses or other harmful consequences. Due to the qualitative nature of operational risks, it is not possible to ever fully protect against them, and their adverse effects cannot be prevented in all cases. Operational risk management does not always aim to eliminate the risk altogether, but it does aim to bring risks down to an acceptable level.

OP Financial Group's management of security risks and security work seeks to foster a culture of security throughout the organisation, develop and maintain the desired security level by emphasising preventive measures and effective management of threats and incidents. In threatening situations, ensuring personal security is always the primary goal, while protecting property and data remains a secondary goal.

The management of ICT risks aims at ensuring the security, availability and quick recovery of data communications and systems that support them during an incident. It is the responsibility of every system owner to see to it that the abovementioned goals are also achieved by external ICT service providers.

The key areas of business operations related to the arrangement of operational risks include:

- Clear organisational structures and well-defined responsibilities.
- Processes with designated owners who are responsible for the efficiency and quality of the processes, as well as regulatory compliance in accordance with the process owner's duties and responsibilities.
- Personnel who must have the required competences and qualifications, and the responsibilities and targets that are set and described clearly and communicated appropriately.
- Systematic fulfilment of internal and external requirements to manage security risks (prevent, observe, react)
- Permissions and authorisations to access data and ICT systems that are based on work duties and that are limited to the data and ICT systems that the employee needs in performing their duties. The management of each OP Financial Group company is responsible for access rights management and control. This also includes defining how to avoid any inadequate segregation of duties.
- Ensuring that information and cyber security are adequate and up to date. Each business unit implements this, for example, through monitoring, systematic technical arrangements, daily monitoring measures and targeted information security audits.
- Verifying the accuracy of all data. The company's management and process owners are responsible for the usability, integrity, confidentiality and availability of data with the aid of technical and administrative measures as well as for protecting data from unauthorised access and illegal or accidental information processing.
- Identification and categorisation of data repositories according their criticality, in view of the confidentiality, integrity and availability of data. Responsibility for the categorisation and the required measures to protect the

data rests with the data repository owner. A data repository is a set of data created for a certain purpose, such as an application with databases or a data set or table created for analytical purposes.

Operational risk management is based on continuous risk identification and analyses. Risk identification also takes account of forthcoming and emerging business risks, climate and environmental impacts, security threats and external requirements, and the required risk management methods are planned in a risk-based manner. The management and process owners within companies are responsible for identifying and evaluating the risks associated with business processes, services and products and the ICT systems they involve, and for implementing the required controls to achieve an acceptable risk level and ensure process functionality and efficiency. Efforts should be made to automate controls or support them by automation whenever possible.

Before any new or substantially modified products, services, business models, processes, systems or outsourcings are launched at OP Financial Group, they must undergo risk assessment in accordance with procedures approved by the central cooperative Risk Management. Each business unit is responsible for conducting the risk assessment procedure. In their risk statement, functions in the second line of defence can escalate decision-making related to the introduction of the product in high-risk projects that are important in principle and involve new risks. OP Financial Group offers only products, services and business models to customers if they have been approved at Group level.

In addition to the standardised procedures for managing operational risks and the means of managing individual risks, companies within OP Financial Group can transfer the impacts of materialised operational risks outside of the company and OP Financial Group by taking out insurance.

Operational risk management frameworks

OP Financial Group's operational risk management framework is divided into backward-looking (e.g. operational risk events), current situation based and proactive procedures (risk and control self-assessment, business continuity management, RCSA regarding new products). The central cooperative's Risk Management is responsible for OP Financial Group's operational risk management framework, its maintenance and development, and issues more detailed instructions on operational risk management procedures followed in OP Financial Group. Risk Management maintains a shared risk library system for identifying operational risks at OP Financial Group – which includes cause, impact, standard risk and control libraries – and which it reviews regularly to ensure that the system is comprehensive and up to date.

The central cooperative's Risk Management reports to the management on the management and level of OP Financial Group's operational risks in a regular report. Company management reports regularly operational risk management and its level to the company's board of directors.

OP Financial Group manages the control, responsibilities, supervision and development of security by means of the Corporate Security Principles, which are approved by the Board of Directors of OP Cooperative and which enable coherent Group-wide security work. The principles and derived guidelines constitute the corporate security governance model.

OP Financial Group uses a centralised cyber security governance model to manage, supervise and report on cyber security. The Cyber Security organisation provides more detailed procedures and operating instructions on implementing and ensuring information security within the Group and managing any information security violations detected. The cyber security operating instructions are policies which guide the Group's activities and which must be complied with in all our work, whether the Group is developing or procuring new systems and solutions. OP Financial Group's Cyber Security function is in charge of managing any deviations from these instructions, and of the related guidelines. The central cooperative consolidated's Cyber Security organisation provides OP Financial Group's Group Executive Management with regular reports on situations that have threatened the Group's information security and data protection.

The central cooperative's Risk Management conducts stress tests on OP Financial Group's operational risks once a year. The operational risk stress test includes a sensitivity analysis and scenarios. The sensitivity analysis makes use of the risk events that have materialised in the entire OP Financial Group, as well as the risks identified in the risk and control self-assessment process and the estimated impacts. Scenarios (alternative possible outcomes) are used to identify risks and assess their impacts from a proactive perspective.

Data capital risk

Data capital risk management

Data capital risk is a risk related to operations and data capital risk management for its part specifies operational risk management.

OP Financial Group's data capital consists of all data in its various forms as held by the Group. The value of data capital is based on its business usability, efficient risk management and, ultimately, its productivity in financial business.

The reliability of risk management processes is dependent on data produced by business processes because risk analyses, indicators and scenarios are in part or in full produced based on this data. Consequently, data and the information derived from it are inseparable and multifaceted production factor in all financial services business, which is called data capital. Risk associated with data capital applies equally every risk area.

Data capital risk materialises when business has to be managed based on information that involves uncertainty. Then preparing for business risk may be excessive, which may lead to financial loss. For example, capital requirement that has been increased due to poor data quality may tie useful capital for other uses. Challenges in customer service or other processes at operational level do not lead to the best possible customer and employee satisfaction.

Benefits of data capital risk management

Management of risks associated with data capital brings a clear business benefit when OP Financial Group's decision-making, management and reporting are based on correct and comprehensive information. In addition, as part of efficient risk management processes, data capital risk management ensures the adequacy of OP Financial Group's regulatory compliance.

Shared practices of data capital risk management at OP Financial Group

For the management of data capital risks, OP Financial Group has in place a Group-level OP data management model and an OP data quality framework. These provide a framework according to which data must be managed and processed. In addition to the data governance model and the data quality framework, qualitative requirements have been defined for the Group to comply with good data governance and quality practices at Group level.

All OP Financial Group actors must apply Group-level data management principles and participate in their development through their own activities.

In data capital management, the management is responsible for

- promoting the identification, assessment and management of data quality risks. This includes reviewing and accepting the frameworks. Compliance with the frameworks minimises data capital risk, or ensures good data quality.
- ensuring that practices required by the frameworks are observed. Observance requires a clear picture of the status of data specification, collection and processing manageability as well as related technical and legal requirements.
- incorporating the promotion of the capabilities related to data and especially the correction of shortcomings into the strategic components related to the IT infrastructure.
- seeing to it that financial and human resources are sufficient in the development of systems containing data capital.
- ensuring that risk reporting is sufficiently defined and understanding the limitations that the status of data quality causes to risk reporting. The management must set objectives for the validity and accuracy of risk reports in both normal and crisis situations. These requirements must reflect the criticality of decisions made based on the reporting.
- being aware of the status of OP Financial Group's regulatory compliance as regards data management and data quality. The management must have an understanding of the measures taken in this respect or which are needed to take in the future to improve regulatory compliance.

Model risks

According to the definition by OP Financial Group, models involve various types of quantitative methods such as

- statistical and mathematical models based on data in the Group's own possession that enable receiving data derived from historical data in the base data
- input data derived from modelling and based on internal or external data that are utilised in formulae, calculation, categorisation or a set of rules
- well-established mathematical formulae in the financial services business, whose parameter values are available from the market.

Risk associated with the use of models, or model risk, refers to potential losses or loss of reputation caused by decisions made on the basis of the results of the models. Model risk is therefore a consequential risk related to the quality of operations and capabilities. The risk involved in using models is operational in nature and may be caused by insufficient or unclear responsibilities for model management at different stages of the model lifecycle, or by insufficient documentation. On other hand, model risk management involves further specification of operational risk management.

The sources of model risks can be divided into the following three categories:

- shortcomings in the development stage of the models
- shortcomings in the implementation of the models and
- shortcomings in the use of models.

All these share common sources of risk, such as shortcomings in data or its quality, poor knowledge of interdependencies between mathematical methods and models, and inadequate knowledge of business, risk measurement and regulation.

The management of models and model risks seeks to ensure that models describe the event concerned sufficiently accurately and their use is appropriately organised. It is not possible to protect against all risks associated with using models. Risk management measures seek to ensure that the risks associated with using models are identified and the related risk level is acceptable. Regarding models used to calculate the minimum capital requirement to cover credit risk, model risk is quantified, in the manner required by regulation, by adjusting the results generated by models to take account of the margin of conservatism. The Group manages model risks through well-defined roles and responsibilities as well as by ensuring adequate knowledge of quantitative methods and resource allocation.

OP Financial Group's model risk management framework defines the roles and responsibilities of the management of the models and model risk management and the practices followed during the model lifecycle. The model lifecycle includes the development, production implementation and use of the model, as well as the maintenance and abandonment of the model.

To implement the models and model risk management, the models are classified based on their business criticality considering for what purpose the model is used and how established the methodology of the model is. The most critical applications of the models are risk pricing, the valuation of agreements for the income statement and risk measurement to calculate regulatory capital requirement or internal economic capital requirement.

That the models are well-established in their applications reduces their criticality. Risks of the use of models based on well-established market practices are mainly associated with how correctly they are implemented. Self-developed models based on internal data capital involve most risk vis-á-vis the modelling of the event and the model's susceptibility of error.

The development of models primarily requires internal historical data found to be of high quality from the needed data, correctly quantified amount of risk position and market information applicable to the valuation of assets and liabilities. The model should be applied when examining the modelled event. The Group uses generally used and proven modelling methods and models whenever they are available. Model development aims to identify shortcomings in the model and the situations where the model performs poorly. Insofar as the models cannot be implemented as required by the nature of the event to be described, it is necessary to depict the shortcomings and the solutions that seek to correct in modelling. The development of the models is segregated from their validation. Regulation and risk management perspectives must be taken into account in the further development of the model.

The model is used only for the purpose for which it is developed and approved. If it is necessary to use parameter values defined differently for various uses, choices must be accurately justified and documented. Extending the use of the model to a new application will always require a new decision. Updates that are made to the model's parameters on the basis of new data and that affect the results of the model are identified separately from actual model changes.

OP Financial Group adopts only models that it has ensured in a sufficient manner in terms of functionality and implementation. The implementation decision is documented in the deciding body's protocol and communicated to Risk Management.

Model ownership involves a clear responsibility to understand all individual matters or variables that affect the profitability of the business concerned and to understand the interdependencies of these variables. It is also the responsibility of the model owner to follow how these variables and their interdependencies change over time.

Standardised and regular monitoring is used in ongoing assessment of model utilisation. The extent, detail and frequency of monitoring must be proportionate to the significance of the model. In monitoring, the Group takes account of regulatory requirements. If the monitoring proves that the model functions more poorly or the annual risk identification process reveals trend-like or structural changes in the business environment, it is necessary to perform validation especially if the model assesses risks that are significant.

The performance of the models is subject to a quantitative and qualitative review, or validation, carried out on a regular basis. The validation requirement also applies to models implemented by the business concerned, not only models implemented by a function independent of the business. Validation complies with predetermined procedures, reviews and tests. The evaluation takes account of the purpose of use of the model and its significance.

Every stage of the model lifecycle also pays attention to adequate documentation and the fulfilment of regulatory requirements set for documentation. Risk Management is responsible for the development and maintenance of a consistent documentation structure.

The management reporting includes information about the functionality and significance of models, the needs for improvements in various areas, and the progress made in rectifying previously identified shortcomings and changes to models. Furthermore, the management must be aware if business cannot be quantified sufficiently well on the basis of the models, and of the reason for this.

Compliance risks

Compliance risk is part of risk associated with operational risk, and compliance risk management is part of internal control. Compliance activities are aimed at ensuring that all OP Financial Group entities comply with laws, official instructions and regulations, self-regulation of markets, and internal guidelines, policies and instructions of OP Financial Group and the entities. Compliance also ensures that customer relationship management complies with appropriate and ethically sound principles and practices.

Compliance risk management tools include monitoring legislative developments, providing the organisation with guidelines, training and consultation related to observing practices based on regulation, as well as supervising regulatory compliance with procedures applied within the organisation. The objective of compliance support is to ensure that the business unit concerned has advance awareness of the regulatory requirements and OP Financial Group's interpretations that it must take into consideration when developing products and services. The business unit concerned is responsible for implementing internal control duties related to processes. Compliance monitoring ensures that the controls acting as the first line of defence are functional and that operations comply with regulations and guidelines.

Materialisation of compliance risk may result not only in financial loss but also other adverse consequences, such as sanctions. Such sanctions may include a corporate fine and separate administrative fines for violation of obligations, and public warnings and reprimands. Compliance risk may materialise in terms of loss or deterioration of reputation or trust.

Responsibility for regulatory compliance and its supervision within OP Financial Group entities rests with the Group Executive Management and the senior management and all supervisors and managers. Everyone employed by OP Financial Group entities is responsible for playing a part in compliance with regulations.

The Compliance organisation regularly reports to the Board of Directors' Risk Committee, the companies' boards of directors and the Executive Management Team's Steering and Compliance Committee on compliance risks and internal control observations in the central cooperative and OP cooperative banks. The Risk Committee supervises the adequacy of business internal control, independent Risk Management and Compliance, operational efficiency and reliability and compliance with the principles governing them.

Other Group-level risks

Concentration risks

Variation in the values of income statement and balance sheet items caused by concentrations is not a risk type as such. The reason behind concentration risk is cumulative exposure to a change in an individual risk factor or to a future scenario, whose materialisation may cause higher-than-expected earnings fluctuations. This is particularly likely to happen if identifying concentrations or restricting them has failed.

Identifying and controlling concentrations is therefore important at all operational levels. The following perspectives must be considered when arranging the identification of concentration risks and their management at OP Financial Group.

1. The identification and management of an individual risk's accumulation is organised **by revenue logic.** The structure of the risk policy must promote the identification of accumulations, whereas limits are used to restrict their size. Examples of revenue logics accumulation include:
    - an individual debtor's accumulation or receivables accumulation (e.g. effective industry or geographical area)
    - risk associated with an individual object of insurance or insured person or accumulation of objects exposed to the same event e.g. through the geography
    - maturity or repricing concentrations of balance sheet items over time or by counterparty group
2. **Individual risks accumulated across** various **revenue generation models**, for the management of which it is necessary to create efficient management procedures that take account of any conflicts of interest. Examples of such accumulated exposures include:
    - the accumulation of individual debtors or industry-specific receivables over OP Financial Group companies
    - dependence of OP Financial Group companies on an individual service provider (e.g. securities clearing and information technology).
3. Earnings fluctuation concurrently caused by various risk factors and accumulated beyond revenue logics must be managed by means of management procedures that take account of any conflicts of interest. Examples of such accumulations are shown below:
    - OP Financial Group may have a concentration in a single counterparty beyond several product areas and companies. Banking may have provided financing for a company in which the Group's insurance companies hold shares. Meanwhile, Pohjola Insurance may be the company's main insurer and OP Life Assurance Company manages the company's group life insurance. In addition, the same company can provide OP Financial Group with technology services.
    - Risks associated with an independent state (e.g. risk of political decisions and local catastrophes, also known collectively as a country risk) may have a similar effect on the operating conditions of actors operating in the country concerned and the results arising from the agreements concluded with the actors in the country are strongly correlated.

The Group-wide risk management process should create mechanisms that prevent the emergence of excessively large direct and indirect risk concentrations at OP Financial Group level by means of decisions on the division of duties. Risk Management should create mechanisms to identify, assess and manage direct and indirect Group-level accumulations.

The risk management principles stated in the risk management process guidelines for each revenue logic and the risk policies that elaborate on these concentration risk management must be an integral part of risk management practices and operational limitation.

The Group manages country risks by determining country limits for different countries that it uses to monitor, control and prevent its country risk concentrations by revenue generation model. When setting limits, the Group takes account, for example, of the country's creditworthiness and susceptibility to natural disasters.

Major benefits can be gained by concentrating service purchases. However, senior management must exercise extreme caution when concentrating an activity with an identified service provider, doing so in accordance with the situation in question and creating an action plan to ensure business continuity in case of problems with the service provider.

Reputational risks

Reputational risk is managed proactively over the long term by complying with regulation, good practices in the financial sector and OP Financial Group's Code of Business Ethics, and by emphasising the transparency of operations and communications. Because reputation and trust are the foundations of financing, they must be taken into account in all activities. Each business plays an important role in recognising the positive and negative impacts of its operations on OP Financial Group's reputation and takes, where necessary, corrective measures.

Active and transparent communications build a strong corporate image and strengthen a company's reputation and trust. The central cooperative's Corporate Communications unit actively monitors the media coverage and social media publicity of the Group and the financial sector, as well as other topical subjects. The public image of the Group and the financial sector is also analysed regularly as part of the contingency plan for liquidity management. The Group must have communications procedures and plans in case of crises and to prevent the realisation of reputational risk.

In addition to systematic communications, OP Financial Group proactively strengthens its reputation by implementing its Corporate Responsibility Programme. The Group has a Code of Business Ethics in place. The Group adheres to international financial, social and environmental responsibility principles and international commitments.

1.2 Declaration on the adequacy of risk management arrangements, and risk statement

In accordance with Article 435, paragraph 1 of Regulation (EU) No 575/2013 (CRR) of the European Parliament and of the Council, OP Financial Group must disclose a declaration approved by the management body, i.e. the Board of Directors of OP Cooperative, on the adequacy of risk management arrangements, as well as a risk statement succinctly describing the institution's overall risk profile associated with the business strategy.

Declaration by OP Cooperative's Board of Directors on 8 February 2022

Based on risk reporting, OP Cooperative's Board of Directors assesses regularly compliance with OP Financial Group's Risk Appetite Statement and Risk Appetite Framework, OP Financial Group's Corporate Security Principles as well as with the risk policies of OP Financial Group and different business divisions. Based on the information it has received, the Board of Directors states that the risk management systems used by OP Financial Group are adequate in respect of OP Financial Group's risk profile and strategy.

Risk statement by OP Cooperative's Board of Directors on 8 February 2022

OP Financial Group's mission is to promote the sustainable prosperity, security and wellbeing of owner-customers and operating region by providing its customers with all banking, investment and insurance services they need.

The starting point for risk-taking is that OP Financial Group mainly takes risks associated with fulfilling its mission. In its risk taking, OP Financial Group emphasises moderation, responsibility and careful practices. Credit and insurance risks and maturity transformation risk are highlighted in OP Financial Group's risk profile.

OP Cooperative's Board of Directors considers that the OP Financial Group's Risk Appetite Statement document, decided by OP Cooperative's Board of Directors and confirmed by the Supervisory Council, clearly describes the general qualitative

bases and preconditions for OP Financial Group's risk-taking and the quantitative limits set in the document for risk-taking are in line with the strategy.

OP Cooperative's Supervisory Council confirmed a number of limits for OP Financial Group for 2021, including the limits for capital adequacy, liquidity and risk appetite as well as the tolerances for the risk appetite related to revenue logics. The limits were used to ensure that OP Financial Group or any of its companies does not take excessive risks to endanger OP Financial Group's or its company's capital adequacy, profitability, liquidity and business continuity. The table below shows OP Financial Group's key limits and tolerances and the actual values of risk-taking metrics based on the 31 December 2021 situation. Risk-taking in OP Financial Group's risk-taking remained throughout the year within the limits and tolerances set by the Supervisory Council.

Limits and tolerances in accordance with OP Financial Group's Risk Appetite Statement (RAS)	31 Dec 2021	31 Dec 2020	Limit
Risk-taking capacity			
Common Equity Tier 1 (CET1) ratio, %	18.2%	18.9%	13.0%
Capital adequacy ratio under the Act on the Supervision of Financial and Insurance Conglomerates (FiCo), %	146%	150%	105%
Largest single customer risk / FiCo capital covering customer risks, %	4.6%	4.04%	10%
Liquidity coverage ratio (LCR), %	212%	196%	120%
Net stable funding ratio (NSFR), %	130%	123%	105%
Risk appetite: economic capital requirement / OP Financial Group internal capital, %			
OP Financial Group	36.53%	45.54%	75%

	31 Dec 2021	31 Dec 2020	Tolerance
OP Financial Group			
Materialised operational risks (net), € million	8.88	6.58	50
Risk appetite and its allocation: economic capital requirement / OP Financial Group internal capital, %			
OP Financial Group	36.53%	45.54%	75%
Banking in total, of which	27.15%	39.11%	53%
Retail Banking	12.91%	17.66%	22.5%
Corporate Banking	11.36%	18.19%	25%
Group Treasury	2.57%	3.03%	5%
Wealth/asset management	0.31%	0.23%	0.5%
Non-life insurance	7.57%	10.87%	12.5%
Life insurance	4.55%	6.27%	8%
Other	1.05%	1.03%	1.5%

The qualitative principles and quantitative limits decided by the Board of Directors and confirmed by the Supervisory Council are supplemented and specified through other risk management instructions and more detailed risk policies applied by the business divisions. These have been used to ensure that risk-taking at OP Financial Group is based on each business division's strategy, and that the company does not take excessive risks to endanger OP Financial Group's or the Group companies' capital adequacy, profitability, liquidity or business continuity.

2 OP Financial Group's capital adequacy

This section presents an overview of OP Financial Group's capital adequacy and base. More detailed information can be found in the OP Amalgamation capital adequacy tables 2021 that will be published in English in a separate Excel file.

2.1 OP amalgamation's capital base and capital adequacy

The amalgamation of cooperative banks consists of the amalgamation's central cooperative (OP Cooperative), the central cooperative's member credit institutions and the companies belonging to their consolidation groups. Although OP Financial Group's insurance companies do not belong to the amalgamation of cooperative banks, investments made in them have a major impact on capital adequacy calculated in accordance with the capital adequacy regulations for credit institutions. More detailed information on companies within the consolidation group can be found in Notes 23 and 84 to the financial statements 2021. Changes in Group structure are presented in OP Financial Group's financial statements bulletin for 1 January–31 December 2021.

2.1.1 Capital base

Capital base, € million	31 Dec 2021	31 Dec 2020
OP Financial Group's equity capital	14,184	13,112
Effect of insurance companies on the Group's shareholders' equity is	-988	-498
Fair value reserve, cash flow hedge	-96	-203
Common Equity Tier 1 (CET1) before deductions	13,101	12,410
Intangible assets	-351	-391
Excess funding of pension liability and valuation adjustments	-132	-93
Cooperative capital deducted from capital base	-160	-126
Planned profit distribution and unpaid profit distribution for previous period	-96	-95
Shortfall of ECL minus expected losses	-356	-413
Insufficient coverage for non-performing exposures	-41	
CET1 capital	11,965	11,293
Hybrid capital to which transitional provision is applied		40
Additional Tier 1 capital (AT1)		40
Tier 1 capital (T1)	11,965	11,333
Debenture loans	1,308	1,599
Debentures to which transitional provision applies	141	
Tier 2 capital (T2)	1,448	1,599
Total capital base	13,413	12,933

The table presents how OP Amalgamation's CET1 capital derives from OP Financial Group's equity capital. The CET1 capital was improved by Banking earnings and Profit Share issues. The deficit of the ECL and the difference of expected losses reduced as a result of an increase in the ECL on the balance sheet. The amount of Profit Shares in CET1 capital was EUR 3.1 billion (2.8).

OP Financial Group has applied transitional provisions regarding old debenture loans to debenture loans. The debenture loans were redeemed during 2021.

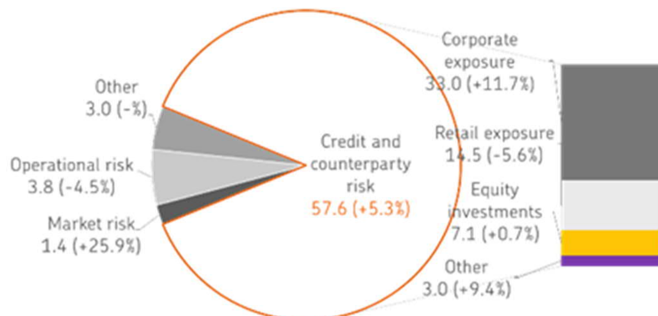
2.1.2 Total risk exposure

Risk exposure amount, € million	31 Dec 2021	31 Dec 2020
Credit and counterparty risk	57,361	54,522
Standardised Approach (SA)	4,822	4,562
Central government and central banks exposure	298	347
Credit institution exposure	5	9
Corporate exposure	3,180	3,068
Retail exposure	1,142	1,026
Equity investments	6	32
Other	190	80
Internal Ratings-based Approach (IRB)	52,539	49,960
Credit institution exposure	1,191	1,029
Corporate exposure	29,808	26,461
Retail exposure	13,320	14,295
Equity investments	7,112	7,036
Other	1,109	1,140
Market and settlement risk (Standardised Approach)	1,380	1,096
Operational risk (Standardised Approach)	3,786	3,964
Valuation adjustment (CVA)	204	138
Other risks	3,000	
Total risk exposure amount	65,731	59,720

The risk exposure amount (REA) totalled EUR 65.7 billion (59.7), or 10% higher than on 31 December 2020. In March, the ECB set a parameter factor for corporate exposures, based on the TRIM (Targeted Review of Internal Models) on corporate exposures, which increased the risk-weighted assets of corporate exposures. In March, OP Financial Group added conservatism to the credit conversion factor for retail exposures, which increased the risk-weighted assets of retail exposures.

The revised Capital Requirements Directive and Regulation (CRR2) came into force in June, which increased counterparty risk associated with derivatives as anticipated. In September, OP Financial Group adopted calibrated parameters in retail and corporate exposures. This adoption slightly increased risk-weighted assets and slightly decreased expected loss.

In December, OP Financial Group proactively increased the amount of risk-weighted assets (RWA) by EUR 3 billion to account for future changes in the scope of application of internal models (IRBA) and in the method for measuring insurance companies' risk weights. The proactive RWA add-on weakened the CET1 ratio by approximately 1.0 percentage point.

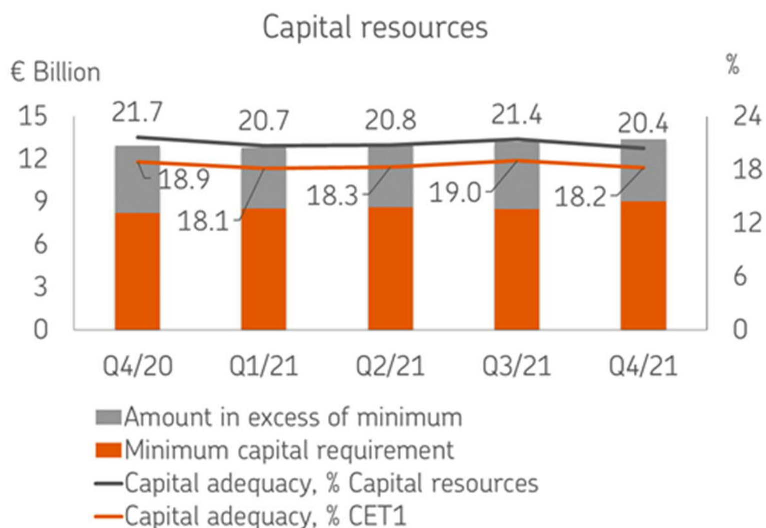


2.1.3 Capital ratios

Ratios, %	31 Dec 2021	31 Dec 2020
CET1 capital ratio	18.2	18.9
Tier 1 ratio	18.2	19.0
Capital adequacy ratio	20.4	21.7

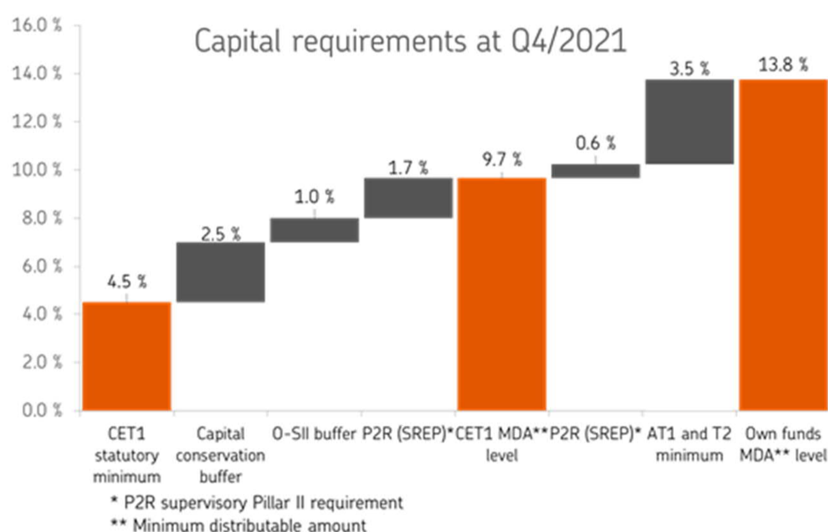
Ratios, fully loaded, %	31 Dec 2021	31 Dec 2020
CET1 capital ratio	18.2	18.9
Tier 1 ratio	18.2	18.9
Capital adequacy ratio	20.2	21.6

OP Financial Group's CET1 ratio was 18.2% (18.9). The ratio was lowered by the ECB's decision, which increased the risk-weighted assets of corporate exposures, and by the proactive addition to the amount of risk-weighted assets to account for future changes in the scope of application of internal models and in the method for measuring insurance companies' risk weights. The ratio was improved by the favourable earnings performance and the issues of Profit Shares.



Capital requirement, € million	31 Dec 2021	31 Dec 2020
Capital base	13,413	12,933
Capital requirement	9,041	8,213
Buffer for capital requirements	4,373	4,719

The capital requirement of 13.8% comprises the minimum requirement of 8%, the capital conservation buffer of 2.5%, the O-SII buffer requirement of 1.0%, the minimum requirement (P2R) of 2.25% set by the ECB and the country-specific countercyclical capital buffers for foreign exposures.



Leverage ratio, EUR million	31 Dec 2021	31 Dec 2020
Tier 1 capital (T1)	11,965	11,333
Total exposure	161,415	144,799
Leverage ratio, %	7.4	7.8

The leverage ratio describes indebtedness. The minimum requirement for the leverage ratio is 3%. The ratio decreased as a result of an increase in central bank deposits.

2.2 Capital base of the financial conglomerate

OP Financial Group's capital adequacy under the Act on the Supervision of Financial and Insurance Conglomerates

€ million	30 Sep 2021	31 Dec 2020
OP Financial Group's equity capital	14,184	13,112
Hybrid instruments and debenture loans	1,448	1,640
Other sector-specific items excluded from capital base	-392	-331
Goodwill and intangible assets	-1,097	-1,147
Insurance business valuation differences*	794	623
Planned profit distribution and unpaid profit distribution for	-96	-95
Items under IFRS deducted from capital base**	-181	-184
Shortfall of ECL minus expected losses	-330	-387
Conglomerate's total capital base	14,331	13,231
Regulatory capital requirement for credit institutions***	8,111	7,284
Regulatory capital requirement for insurance operations*	1,672	1,508
Conglomerate's total minimum capital requirement	9,783	8,791
Conglomerate's capital adequacy	4,547	4,439
Conglomerate's capital adequacy ratio	146	150

* Differences between fair values and carrying amounts based on the solvency of insurance companies and an estimate of SCR
** Excess funding of pension liability, portion of cash flow hedge of fair value reserve
*** Total risk exposure amount x 13.8%

Transitional provisions have been taken into account in figures. OP Financial Group's capital base, calculated according to the Act on the Supervision of Financial and Insurance Conglomerates (FiCo), exceeded the minimum amount specified in the Act by EUR 4.5 billion (4.4). Banking capital requirement remained unchanged at 13.8%, calculated on risk-weighted assets. The ratio of the Group capital base to the minimum capital requirement was 146% (150). As a result of the buffer requirements for banking and the solvency requirements for insurance companies, the minimum FiCo solvency of 100% reflects the level within which the conglomerate can operate without regulatory obligations resulting from buffers below the required level.

3 Signatures

The Board of Directors confirms that OP Financial Group's risk and capital adequacy report 2021 and OP Amalgamation's capital adequacy tables 2021 have been disclosed in compliance with Part 8 of the CRR and the related EBA guidelines and the reports have been prepared applying the principles of capital adequacy disclosure adopted by OP Cooperative's Board of Directors in 2021. The principles define methods used to verify the accuracy of information to be disclosed and the assessment of the materiality of the information.

Helsinki, 1 March 2022

Jaakko Pehkonen
Chair of the Board of Directors

Timo Ritakallio
President and Group Executive Chair

Jarna Heinonen

Jari Himanen

Kati Levoranta

Pekka Loikkanen

Tero Ojanperä

Riitta Palomäki

Petri Sahlström

Olli Tarkkanen

Mervi Väisänen