Annual Report 2022

Triodos Bank

Risk management

The Executive Board is responsible for designing, implementing and maintaining an adequate system for internal control over financial reporting. Financial reporting is the product of a structured process carried out by various functions and banking business units under the direction and supervision of the financial management of Triodos Bank.

The Executive Board is responsible for the risk management and compliance functions. The risk management function develops and executes risk policies and procedures involving identification, measurement, assessment, mitigation and monitoring of financial and non-financial risks. The compliance function plays a key role in monitoring Triodos Bank's adherence to external regulations and internal policies. The adequate functioning of the risk management and compliance functions as part of the internal control system is supported by Triodos Bank's culture and discussed with the Audit and Risk Committee.

Triodos Bank's internal audit function provides independent and objective assurance of Triodos Bank's corporate governance, internal controls, compliance and risk management systems. The Executive Board, under the supervision of the Supervisory Board and its Audit and Risk Committee, is responsible for adopting the overall internal audit plan and the monitoring thereof.

The risk management framework is an important building block in the internal control structure of the bank. Triodos Bank is working in a changing environment, which requires regular upgrades of its internal control structure and frameworks. The risk management and control framework cannot guarantee an absolute level of reliability but provides a solid level of assurance regarding the accuracy of financial reporting and the fair presentation of its financial statements.

The Executive Board report provides insight into the functioning of internal controls, compliance and risk management systems. Triodos Bank's risk management and control framework continues to evolve to support the business and to meet regulatory requirements. As per the Corporate Governance Code the Executive Board evaluates the functioning of the internal control functions on an annual basis.

Risk management and governance

Risk statement

The risk management and control framework provides reasonable assurance regarding the reliability of financial reporting and the fair presentation of financial statements.

Objective

The risk management objective of Triodos Bank is to maintain an environment that supports the bank in pursuing its mission and in realising its strategic objectives. This implies that a structural context is provided to effectively identify and manage the risks inherent in the bank's activities, proportionate to its size and complexity.

The Three Lines Model

The Three Lines Model is an industry-wide applied organisational risk concept that is integrated in the internal governance and organisation of Triodos Bank. The concept strengthens Triodos Bank's risk control by consistently assigning and embedding clearly defined risk management roles and responsibilities within the organisation. The rationale behind the three lines concept is that risk management can only be effective when it is embedded and exercised in all constituent parts of the bank. For the same reason that risks may, in principle, surface and manifest themselves anywhere within the bank, risk awareness is to be maintained at all levels throughout the bank. The risk function is not solely responsible for the management of risk. All co-workers share responsibility for risk taking and risk management. The three lines concept offers an effective framework to identify and adequately address the risks that may jeopardise the realisation of the bank's strategic objectives in a timely way. This contributes to a sound risk culture in line with Triodos Bank's mission and values.

The first line is primarily responsible for managing the risks it incurs in conducting business activities and operations within its span of control. The first line therefore has the 'ownership' of these risks. From a functional area perspective, first-line responsibilities are shared by the respective functional areas.

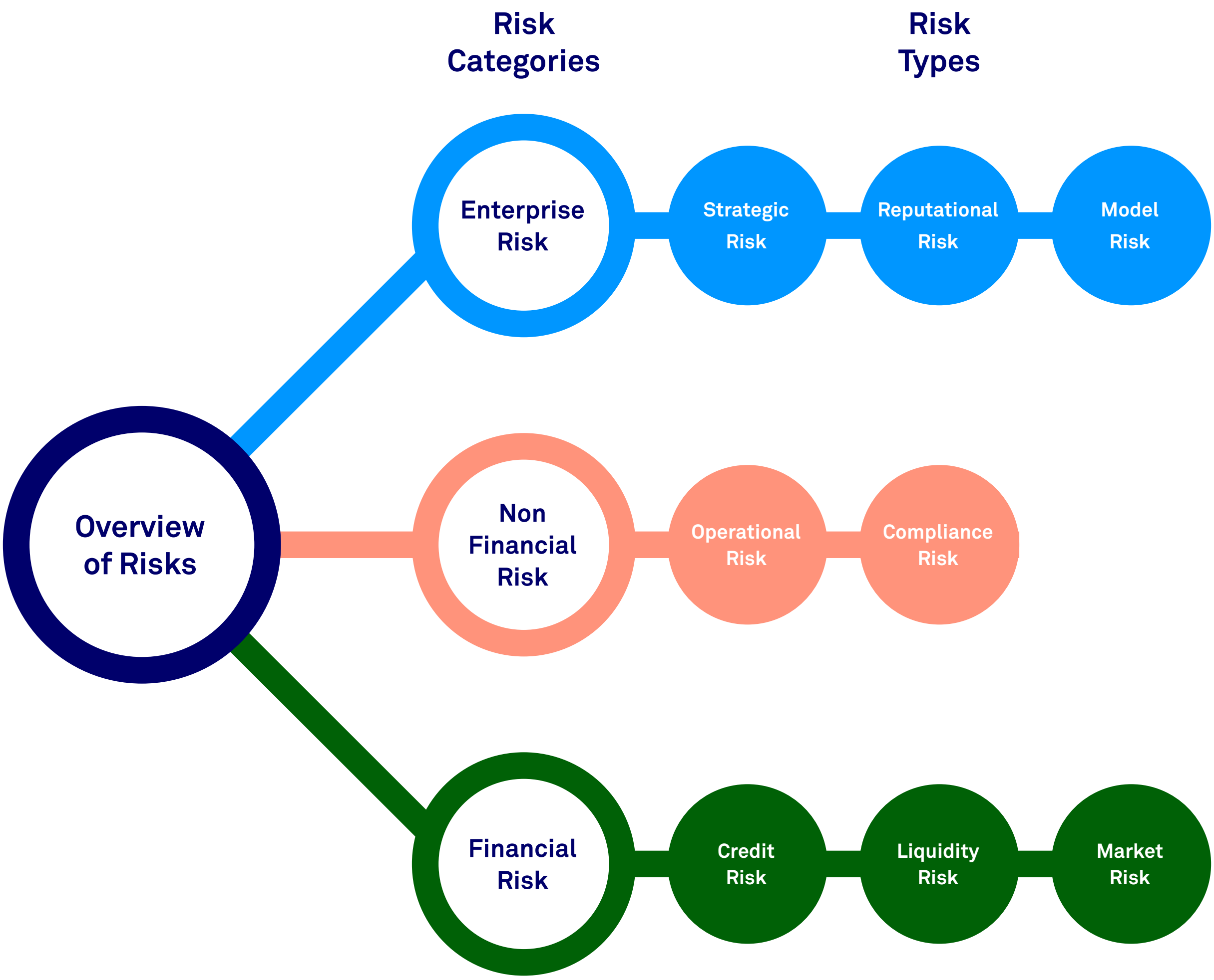
The second line consists of the risk management and compliance functions. Both functions are present at local business unit level and at Group level. Whereas the first line exercises 'risk ownership', the second line exercises 'risk oversight'. The second line supports and facilitates a sound risk management and control framework throughout the bank, oversees the control processes and controls in place at the first line to ensure proper design and effectiveness and actively engages with the first line to jointly enhance the functioning of the risk management and control framework of the bank.

The third line consists of the internal audit function, which provides 'risk assurance' by providing risk-based independent and objective assurance, advice and insight to the Executive Board, Supervisory Board, senior management and managers at Group and business unit level. This is done by a structured and balanced approach of evaluation, reporting and advising regarding the corporate governance structure, internal control, compliance and risk management functions of the bank.

Risk organisation

The risk management and compliance functions provide relevant independent information, analyses and expert judgement on risk exposures, and advise on whether proposals and risk decisions to be made by the Executive Board and business or support business units are consistent with the institution's risk appetite. The risk management and compliance functions recommend improvements to the risk management framework and monitor breaches of risk policies, procedures and limits.

The structure of the risk organisation meets banking industry standards and covers all identified relevant risks for Triodos Bank within three main risk categories: enterprise risk, financial risk and non-financial risk. Each risk category consists of a number of risk types (see diagram below).



The Executive Board has (partly) delegated decision-making authority to the following risk committees at a central level:

- for enterprise risk, the Enterprise Risk Committee has authority to decide on strategic, model and reputational risk issues;
- for financial risk, the Central Credit Committee has authority to take decisions on credit risks, both on an individual debtor level and on a credit portfolio level; the Asset and Liability Committee has authority to decide on market risks and liquidity risk;
- for non-financial risk, the Non-financial Risk Committee has authority to decide on operational and compliance risk matters. The Group Product Governance Committee has the authority to approve new products and review existing products. The Anti-Money Laundering and Countering Terrorist Financing Risk Committee oversees management of risks related to the regulation and associated measures to combat money laundering and counter the financing of terrorism.The Regulatory Change Committee steers, monitors and takes decisions on regulatory change management to ensure a timely and traceable implementation of regulatory changes across Triodos Bank Group.

Business units have local decision-making committees in place, such as a local Non-financial Risk Committee and a local Anti-Money Laundering and Countering Terrorist Financing Risk Committee. In addition, the business units that engage in local lending have a local Credit Committee in place. The processes and mandates for the local decision-making committees are captured in their respective charters.

The Supervisory Board’s Audit and Risk Committee supervises the activities of the Executive Board with respect to the operation and adequacy of internal risk management and control systems. The task of the Audit and Risk Committee is to prepare the discussions and decision-making of the Supervisory Board on financial reporting, audit issues and risk management. The (entire) Supervisory Board remains responsible for decisions prepared by the Audit and Risk Committee. The Audit and Risk Committee consists of at least three members of the Supervisory Board, appointed by the Supervisory Board. Members of this Committee are Sebastien D’Hondt (Chair), Danielle Melis and Susanne Hannestad. The Audit and Risk Committee met eight times in 2022. The Group Directors of Risk and the Group Director Compliance report directly to the Chief Risk Officer. The head of the risk function (the CRO) and the head of the compliance function (the Group Director Compliance), have direct access to the Supervisory Board to raise concerns and escalate issues whenever required.

Risk culture

Risk mitigation is an essential component of Triodos Bank's mission and business model. In addition, the risk management framework ensures co-workers at all levels have the same risk perspective and that formal structures and policies are addressed in a unified and congruent manner across the bank. Triodos Bank strives for a risk culture that is both robust and embedded. An environment of open communication and effective challenge, in which decision-making processes encourage a broad range of views and a constructive critical attitude such that sound and informed decisions can be made, is important to such a culture. Risk-conscious leadership is key to establishing and enhancing the risk attitude and behaviour. Leading by example and setting the tone at the top are prerequisites for the aspired risk culture.

Enterprise risk

The enterprise risk discipline synthesises the risks of all risk areas and performs analyses to determine at a strategic level which circumstances and developments may potentially influence Triodos Bank’s risk profile. Triodos Bank manages enterprise risk by means of specific tasks and related activities: performing strategic risk assessments, defining the risk appetite, assessing capital and liquidity requirements, and monitoring the risk profile through periodic enterprise risk management (ERM) reporting.

Risk appetite

Triodos Bank's risk appetite process aligns its risk profile with the willingness to take risk in delivering its business objectives. The Risk Appetite Statement is reviewed yearly and is endorsed by the Supervisory Board based on advice from the Audit and Risk Committee. Triodos Bank's risk appetite and the connection with the strategy and business objectives are illustrated below:

Strategy & Business Objectives

Risk capacity

- The maximum level of risk the financial institution can assume given its current level of resources before breaching constraints determined by regulatory capital and liquidity needs, the operational environment (e.g. technical infrastructure, risk management capabilities, expertise) and obligations, also from a conduct perspective, to depositors, policyholders, shareholders, fixed income investors, as well as other customers and stakeholders.

Risk appetite

- The aggregate level and types of risk a financial institution is willing to assume within its risk capacity to achieve its strategic objectives and business plan.
- Directly related to an entity's risk capacity as well as its culture, desired level of risk/return, capability and business strategy.

Risk limits

- Quantitative measures based on forward looking assumptions that allocate the financial institution's aggregate risk appetite statement (e.g. measure of loss or negative events) to business lines, legal entities as relevant, specific risk categories, concentrations, and as appropriate, other levels.

Risk profile

- Point in time assessment of the financial institution's gross and, as appropriate, net risk exposures (after taking into account mitigants) aggregated within and across each relevant risk category based on forward looking assumptions.

The risk appetite is based on three objectives that match Triodos Bank's corporate goals and ensure a sustainable banking model. These objectives are: (1) to protect identity and reputation, (2) to maintain sound balance sheet relations, and (3) to realise adequate financial returns.

Triodos Bank uses a defined set of key risk indicators and limits to test the actual risk profile of Triodos Bank against its risk appetite. Triodos Bank strives for an overall modest risk profile. The risk limits, determined at Group level, are cascaded for each business unit. Breaches of risk appetite limits are governed by a specific breach procedure.

Enterprise risk reporting

The principal objective of the ERM report is to set the actual risk profile of Triodos Bank against its risk appetite, to assess if key risk indicators have been breached and to determine what actions may need to be taken. In addition, the ERM report creates a single point of reference for all risk-related profiles and activities within Triodos Bank. The ERM report provides insights into specific risk themes and provides an integrated picture of risk at corporate level. This report is discussed in the Enterprise Risk Committee and the Executive Board, and shared with the Audit and Risk Committee and the Supervisory Board.

Every risk discipline reports on a regular and periodic basis depending on the characteristics of the respective risk types. These risk reports are discussed in corresponding risk committees and measures are taken whenever needed. On a quarterly basis, they are integrated in the ERM report, which provides insights into the aggregated Triodos Bank risk profile in relation to its risk appetite.

Stress testing

Stress testing is part of Triodos Bank's risk management practice. It is of critical importance, in establishing a well-balanced forward-looking management view, to incorporate adverse developments and circumstances that the bank might be exposed to. Stress testing exercises provide valuable insights into the exposure of the portfolio to risk events. Stress testing for capital and liquidity adequacy at Triodos Bank is conducted at several levels: Group-wide, by at-risk domain and at sector level. Sensitivity tests are also carried out as part of the annual business banking sector analyses.

The firm-wide scenario stress-test analysis process may be broken down into a sequence of phases, which translate defined stress scenarios into risk events and indicators that measure their associated risk levels. After determination of the impact and the aggregation of the results, the outcome is reported and discussed in the Enterprise Risk Committee. Scenarios that are assessed are of a varied nature, including climate stress, macro-economic stress and idiosyncratic stress (e.g. operational and reputational stress).

Recovery

The Recovery Plan specifies measures that allow Triodos Bank to recover from possible severe circumstances. The aim of the Recovery Plan is to be prepared for such events, ready to act if there are any breaches forecasted and to identify and quantify the effectiveness of measures in different stress scenarios.

Strategic risk

Strategic risk may be described as the risk of a lack of achievement of the bank's overall objectives due to internal and/or external causes. Strategic risk can be broken down into three subcategories:
- Direction risk: the risk that Triodos Bank does not select the optimal strategy given the status of, and outlook on, the external and internal environment.
- Execution risk: the risk that the selected strategy is not implemented and/or executed adequately as per planning, budget or other requirements.
- Modification risk: the risk that the selected strategy becomes obsolete due to changes in the external and/or internal environment.

The external landscape is subject to constant change and related uncertainty. In particular, geopolitical circumstances, the interest rate environment, climate change, energy transition, regulatory requirements and technological progress are examples of relevant developments. Additionally, more sudden and disruptive events may occur, such as the COVID-19 pandemic and the Ukraine crisis. The challenges that arise from these changes continuously influence Triodos Bank. The strategy of Triodos Bank is therefore assessed from a strategic risk perspective to ensure timely adjustment if deemed necessary.

Environmental, social and governance risks

Environmental, social and governance (ESG) risks refer to the non-financial risks, stemming from the current or prospective impacts of ESG factors on the bank's counterparties, that may negatively affect the bank's financial performance. The ESG factors are described in the following paragraphs.

Environmental factors
Climate change and environmental degradation are sources of structural change that affect the quality of life and economic activity as well as the financial system. Climate-related and environmental factors can be divided into two distinct categories:

Physical: The physical environmental factors refer to the financial impact of a changing climate, including more frequent extreme weather events and gradual changes in climate and of environmental degradation (e.g. pollution, biodiversity loss and deforestation). The physical driver is categorised as 'acute' when it arises from extreme events (e.g. droughts, floods and storms) or 'chronic' when it arises from progressive shifts (e.g. sea-level rises and resource scarcity).

Transitional: The transitional factors refer to the possible financial loss that may result, directly or indirectly, from the process of adjustment towards a lower-carbon and more environmentally sustainable economy (e.g. due to a relatively abrupt adoption of climate and environmental policies, technological progress or changes in market sentiment and preferences).

Social factors
Social factors are related to the rights, well-being and interests of people and communities and include factors such as equality, health, inclusiveness, labour relations and workplace health and safety. In general, it concerns the bank's interaction with its social environment, i.e. the relationships with its broader stakeholder audience: clients, co-workers, regulators and relevant communities/markets in which it operates.

Three main sources from which social factors - and subsequent risks - may originate are distinguished:
• Environment: The continuous deterioration of environmental conditions implies heightened social risks, such as when climate-related physical change or water stress affect (deprived parts of) a geographical area and (already disadvantaged) populations. Environmental degradation can exacerbate migration and social and political unrest in the most affected regions, with potentially more devastating repercussions and contagion across the globe.
• Market and social sentiment: The ongoing evolution of collective value systems brings forth new social frameworks of reference. The social transformation towards a more inclusive, equitable society is an example of such an evolution.
• Policy actions: Policy actions can and have been taken in response to social movements (e.g. demanding equal pay or equal representation, in addition to workforce diversity). Such policy actions may constitute a risk for companies that are not prepared or willing to adapt.

Governance factors
Governance factors cover governance practices, including executive leadership, executive pay, audits, internal controls, board independence, shareholder rights and the ways in which banks include environmental and social factors in their policies and procedures. Note that governance factors in the ESG context do not refer to the regular governance arrangements of the bank, but instead to governance factors that have an impact on or are impacted by the bank's counterparties or invested assets, including governance arrangements for the environmental and social factors in counterparty policies and procedures. Governance factors may be part of national legislation, such as corporate governance codes, that aim at long-term sustainable value creation (rather than short-term benefits).

Management of ESG risks
Triodos Bank employs strict criteria to ensure the sustainability of products and services. It employs both positive criteria, to ensure it is actively doing good, and negative criteria for exclusion, to ensure it does not do any harm. The negative criteria exclude loans and investments in sectors or activities that are damaging to society and environment. The positive criteria identify leading businesses and encourage their contributions to a sustainable society.

Triodos Bank's strategy, credit granting process and product approval process are aligned with its sustainable and values-based mission. Triodos Bank assesses the impact, risk and return of its business decisions in line with its mission and Risk Appetite Statement. The Minimum Standards set out the absolute minimum requirements that Triodos Bank applies to its banking and investment activities. In its day-to-day decision-making Triodos Bank is guided by its Business Principles. All sustainability criteria referred to in this section can be found on the bank's website. Lending criteria and minimum standards are available on the website.

Because the sustainable and values-based mission is the starting point of its lending process, Triodos Bank's exposure to transition risks is considered minimal. Business banking lending is focused on financing enterprises that contribute to a low-carbon future. As a strategic target, Triodos Bank has set itself the objective of reaching a net-zero emission level by 2035, underlining its commitment to contribute to a sustainable future.

As a result of climate change Triodos Bank's portfolio is exposed to physical climate risks. On an annual basis, Triodos Bank carries out climate-risk stress tests, to assess the potential impact of extreme weather events such as storms, floods and droughts to its asset portfolio. Within the financial planning period a material impact of physical climate risk is considered to be unlikely.

The Executive Board, under the supervision of the Supervisory Board, is accountable for the management of environmental and climate-related risks as well as for setting and overseeing Triodos Bank's strategy in this respect. The approach to managing environmental and climate-related risks is assigned to the Enterprise Risk Committee. At board level the Chief Risk Officer is primarily responsible for the oversight of environmental and climate-related risks. The Enterprise Risk Management department is responsible for the framework that governs environmental and climate-related risks and ensures alignment with relevant risk policies within the larger risk policy framework.

ESG considerations are shared at all levels of Triodos Bank and are an integral part of its management, including the evaluation of risks. ESG-related aspects are taken into account in all day-to-day business decisions whenever relevant. ESG-related risk factors all have their specific characteristics and are captured in the relevant policies and guidelines. Triodos Bank is currently in the process of combining these different policies and guidelines in one single overarching Group ESG framework to further improve the effectiveness of its risk management.

Reputational risk

Triodos Bank defines reputational risk as the risk arising from negative perception by customers, counterparties, shareholders or regulators, which can adversely affect the bank's ability to maintain existing, or establish new, (business) relationships and continued access to sources of funding.

As a values-based bank, Triodos Bank's reputation is vital to its ability to pursue its mission. As such, Triodos Bank's reputation is managed in a proactive manner, for the most part by 'doing things right' and 'doing right in line with Triodos Bank's mission'. Generally, proactively managing its reputation implies for Triodos Bank: (1) attracting and retaining qualified employees that have a strong affinity with Triodos Bank's mission and values; (2) maintaining a sound risk governance structure that enables the correct execution and control of bank-related processes; and (3) actively positioning Triodos Bank's identity, its positive impact (for the longer term) and connection to society.

Model risk

Model risk refers to the potential for negative consequences arising from the decisions made based on incorrect or misused model outputs and reports. It can result in financial loss, poor decision-making, and damage to the reputation of Triodos Bank.

Triodos Bank develops and uses internal models to quantify the risk for most risk types in the risk taxonomy. The models for credit, market, liquidity and strategic risk are the most widely used to measure the level of risk. Model outputs are used to support day-to-day decision-making and as input in management and regulatory reporting.

New models require approval before being implemented and used. Internal approval for the use (or continued use) of a model is obtained from the Model Approval and Review Committee (MARC). The Group Modelling and Valuation department develops models in close cooperation with the relevant business and risk experts.

Model Risk Management proposes and maintains standards for the model lifecycle and validation, and facilitates model risk identification and measurement and reports on model risk in line with the model risk management framework, which includes model validation standards and procedures. Model data, methodology, performance and implementation are checked according to these standards and reviewed against internal and regulatory requirements.

Non-financial risk

Non-financial risk includes all the risks faced in Triodos Bank's regular activities and processes, that are not categorised as enterprise risk or financial risk. Triodos Bank has subdivided non-financial risk into operational risk and compliance risk. Monitoring these risks is particularly important to ensure that Triodos Bank can continue to offer quality financial services to its stakeholders.

Operational risk

Operational risks relate to losses that Triodos Bank could incur as a result of inadequate or failing internal processes, systems, human behaviour or external events. Triodos Bank limits these risks with clear policies, procedures and controls for all business processes.

Operational risk management (ORM) consists of identifying, managing and monitoring the risks within several subcategories including information security, business continuity, tax risk and financial reporting risk.

Activities to manage risks related to these subjects are, from a second-line perspective, executed under the responsibility of the Chief Risk Officer (CRO) in line with the ORM framework. At Triodos Bank Head Office, the Group Head of ORM reports to the CRO. The Group risk management function is mirrored locally in each business unit. At business unit level, the local Head of ORM reports hierarchically to the local Head of Risk and functionally to the Group Head of ORM. The local Head of Risk reports hierarchically to the Managing Director and functionally to the Chief Risk Officer.

The Non-financial Risk Committee is a Group-level decision-making risk committee delegated by the Executive Board to take decisions related to the non-financial risk profile and mitigating measures. When it comes to the non-financial risk appetite the EB remains the final decision-making body. This committee meets both locally and at a Group level on a monthly basis. In 2022, appetite levels of the non-financial key risk indicators were reviewed, updated and cascaded to the business units.

The ORM framework follows the principles set out by the Bank for International Settlements in 'Sound Practices for the Management and Supervision of Operational Risk', which provides guidelines for the qualitative implementation of ORM.

The ORM framework uses several tools and technologies to identify, measure and monitor risks and monitors the level of control on an operational, tactical and strategic level. In 2022, control testing and key control management measures were extended to support the monitoring of the deposit guarantee scheme related control objectives. The ORM department performs analyses on a continuous basis according to a risk event management process and maintains strong reporting and communication lines between local Operational Risk departments and Group ORM.

The In-Control Statement framework describes the methodology and process to achieve this objective. Next to the ability to demonstrate control, the bank recognises and appreciates the inherent value that comes with performing the control assessments and processes underlying the actual In-Control Statement, such as the conversation on how to further improve on controlling risks of relevant processes and value chains.

The In-Control Statement (ICS) methodology adopted by Triodos Bank originates from the COSO framework; the most widely adopted control framework. The COSO control components, as embodied in the 'key responsibilities' of each role description, form the basis for the control assessment(s) within Triodos Bank. Depending on the role, specific control components may be more emphasised than other components. The control components: 'risk assessment' (risk identification) and 'control activities' (risk mitigation) play a predominant role in the control framework of the bank.

Information security

Cyber threats are considered to be at a high level in the financial sector. Triodos Bank performs periodic cyber-threat assessments and risk self-assessments to determine the adequacy of its information security strategy and to further strengthen its security controls. The information security management system is set up in line with the European Banking Authority (EBA) Guidelines on ICT and security risk management. A Security Operations Centre (SOC) detects and responds to cyber-security events. The roll-out of a security awareness and behaviour programme in all business units supports co-worker security awareness. Triodos Bank performs the periodic threat intelligence based ethical red-teaming (TIBER) test as part of ICT and security management. The IT risk management process is fully aligned with the operational risk management framework. Key controls are defined and tested accordingly.

Business continuity management

Business continuity management (BCM) is the management process that identifies potential threats to business processes of Triodos Bank and the impact on business operations if those threats materialise. BCM provides a framework for building organisational resilience by developing an effective preparation and response capability that safeguards the interests of its key stakeholders, reputation, brand and value-creating activities in case identified threats occur. The purpose of BCM is to ensure that Triodos Bank's critical processes can be maintained or recovered in a timely way after a disruption or incident, to minimise negative personal, operational, financial, legal and/or reputational impact. Within the Risk Management framework, the governance of the BCM process is described in the Group BCM policy. The policy is written in line with the applicable regulations and guidelines.

Tax risk

Triodos Bank is subject to international tax risks due to its operations in a number of Western European countries. The local tax risks are managed by the respective local Triodos Bank business units in close cooperation with the Tax department at Group level. Triodos Investment Management investment funds operate worldwide. All tax-risk-related issues are handled by a dedicated tax department in close cooperation with Group Tax.

Fraud risk

Triodos Bank performs a yearly Systematic Integrity Risk Analysis (SIRA) to assess its vulnerabilities to, amongst others, fraud.

The number of internal fraud incidents within Triodos is relatively low. Controls like internal training and awareness are in place and Triodos has pre- and in-employment procedures resulting in a low-risk culture in relation to fraud. The number of incidents has been limited in the last years and the impact minimal.

External fraud is much more common, as it is with peers in the sector. Triodos has implemented a number of extra fraud monitoring controls over the past years. More specifically, the number of (generic) rules to recognise social engineering attacks has increased significantly in the last years. In addition, there have been adjustments at the product level to mitigate fraud risk. For instance, the default online payment limits have been decreased and the duration after a limit adjustment was deliberately lengthened. Moreover, the information on our secure banking webpage has been updated, further expanded, made more easily available and better explained in short videos. And lastly, we invested more in warning our customers even more specifically about fraud attacks.

The impact of fraud on the annual results is limited. Within Triodos, a central KYC and Financial Crime domain has been set-up with a Group Director to functionally steer Triodos Bank's policy and practice on financial crime at Group level.

Financial reporting risk

Triodos Bank is subject to financial reporting risk which relates to interpretation of regulations, data quality and estimations and assumptions applied as disclosed in the financial statements. Triodos Bank is continuously improving its reporting and the risk and control frameworks surrounding the reporting processes. Projects and improvement programmes have been set up to ensure effective and efficient usage and analysis of data to support its decision-making processes.

Compliance risk

Triodos Bank defines compliance risk as the risk of legal or regulatory sanctions, material financial loss or loss to reputation that Triodos Bank may suffer as a result of its failure to comply with laws, regulations, rules, related self-regulatory standards and codes of conduct applicable to its banking activities. Internal policies, procedures and awareness activities are in place to guarantee that co-workers in all functions comply with relevant laws and regulations.

The compliance function independently monitors and challenges the extent to which Triodos Bank complies with laws, regulations and internal policies, with an emphasis on customer due diligence, anti-money laundering, treating customers fairly, preventing and managing conflicts of interest, data protection and the integrity of co-workers.

Triodos Bank has a Group compliance team which is led by the MT Compliance chaired by the Group Director Compliance, who is also the Group Data Protection Officer. Compliance Officers and Data Protection Officers are appointed in every banking business unit with a functional line to the central Compliance department. The Heads of Compliance from all entities form the MT Compliance. The Group

Director Compliance reports to the Chief Risk Officer. An escalation line to the Chair of the Audit and Risk Committee supports the independence of the compliance function.

Triodos Bank aims to serve the interests of all stakeholders by actively fulfilling its role as a gatekeeper in the financial system and by countering money laundering and terrorism financing. The bank applies various procedures and measures in this respect.

Legal risk

In October 2022 Stichting Certificaathouders Triodos Bank filed with the Enterprise Chamber in Amsterdam a request for an inquiry into the policy and affairs of Triodos Bank. Triodos Bank asked the Enterprise Chamber to reject the request in December 2022. Shortly after finalisation of this Annual Report, the decision by the Enterprise Chamber will probably be announced. Some individual DR holders have decided to pursue legal actions leading to court cases. We refer to the Annual Accounts for more information about this.

Triodos Bank was not involved in any other material legal proceedings or any other further sanctions associated with non-compliance with legislation or regulations in terms of financial supervision, corruption, advertisements, competition, data protection or product liability.

Financial risk

Financial risk is an umbrella term for a variety of risk types associated with the balance sheet and financial performance of Triodos Bank. Financial risk is subdivided into three types: credit risk, liquidity risk and market risk.

Credit risk

Credit risk management

Credit risk is the risk that a counterparty does not fulfil its financial obligations. Triodos Bank manages its credit risk at client and portfolio level. It operates within a predefined set of criteria for accepting credits. Credits are extended within the target markets and lending strategy in accordance with Triodos Bank's mission and expertise. Before accepting a credit facility, Triodos Bank assesses the customer's risk profile, cash flows, available collateral and the requested transaction, including an assessment of the integrity and reputation of the borrower or counterparty. Analysis of compliance with Triodos Bank's lending criteria is an integral part of each credit proposal.

Triodos Bank has developed an internal rating-based economic capital model that estimates a counterparty's probability of default and the expected loss of a credit exposure.

Credit risk organisational structure

Each banking business unit has a credit risk team headed by a Head of Credit Risk. The teams comprise credit risk analysts and special asset managers. They have a functional reporting line to the Group Head of Credit Risk at Head Office. At Group level, a dedicated team is in place with credit analysts, data analysts and special asset management specialists.

At local and group level, individual files have a second-line review and the portfolio is monitored and reviewed on a continuous basis. The aggregated portfolio is monitored at Group level. The resulting analysis is provided to the local and/or Central Credit Committee for decision-making on approvals for individual files, lending criteria for sectors and limits on sectors, countries or individual obligors.

Business units need to prove, both after initial implementation and in case of changes to policies, that requirements are met in local documentation by showing in which local documents each requirement is written down. Evidence of the implementation is derived from the key controls. Deviations from this policy should be approved via the monthly Central Credit Committee or Non-financial Risk Committee.

Key controls related to policies are defined in our Risk Control Self-Assessment (RCSA), based on the standardised process as described in the Corporate Lending Handbook. The key controls contain a risk-based subset of the requirements. The first line is responsible for enacting the key controls within its processes. Periodically, within the regular operational risk management cycle, key controls will be tested for their operational effectiveness by the first line. At the local level, management information dashboards are in place to monitor the risks on a continuous basis. Internal Audit performs audits on the lending activities on a regular basis.

Concentration risk

Loans are provided to businesses and projects that contribute to achieving Triodos Bank's mission. Given that this involves a small number of sustainable sectors, a certain level of sector concentration is inherent to the loan portfolio. Concentration in the existing sectors is acceptable as Triodos Bank has considerable expertise in these sectors, actively invests in further increasing its knowledge and actively diversifies through geographies.

Triodos Bank focuses primarily on the quality and diversification of its loan portfolio. Triodos Bank puts extra effort into identifying loans to frontrunners with a track record in their sectors, the entrepreneurs developing the sustainable industries of the future.

A diversified credit risk portfolio is the result of assets spread over many debtors, sectors and geographies that are not inter- or intra-related. In order to manage concentration risks and face an economic downturn with confidence, Triodos Bank maintains a set of concentration limits. The limits are based on the bank's capital base and reflect the risk appetite.

Triodos Bank measures and limits the following concentration risks in its lending activities:
- Obligor exposures
- Group exposures
- Top 20 exposures excluding (sub-)government exposures
- Government exposures
- Sector exposures
- Non-bank financial intermediation (shadow banking) exposures
- Mortgage exposures
- Country exposures

Besides lending activities, Triodos Bank has established limits related to the investment portfolio:
- Maximum exposure on government and sub-governments
- Maximum exposure on supranational institutions
- Maximum exposure on banks and financial institutions

Sector concentrations

Triodos Bank is active in well-defined sectors where it has extensive expertise and which are in line with its mission. It has set limits on sectors, based on actual own funds, at Group and banking entity level. Sector studies have shown relatively low correlations of risk drivers in sectors that Triodos Bank finances in multiple countries.

At Group level, Triodos Bank divides the sector concentration limits into different levels. Specific limits for each sector per country are set by the Executive Board within these levels, taking account of the specific risks of each sector and country. Furthermore, risk-weighted assets (RWAs) are assigned to the different sectors and countries, with regard to these risks, the impact they generates and the return on capital they provides.

Larger sectors are strategic for Triodos Bank. These are well distributed across banking business units (and countries) and have an overall low risk profile that justifies a higher consolidated concentration. Sector analyses are performed on an annual basis and are presented to the Central Credit Committee to be able to respond swiftly to developments that may affect the risk profile of the portfolio. Group Credit Risk can request sector updates at shorter intervals if there is a change to a sector risk profile.

Sector limits are approved on the basis of thorough annual sector analyses demonstrating an in-depth knowledge of the sector and Triodos Bank's track record.

Country concentrations

Triodos Bank is a European bank, acting under the European Banking Directive since 1993, with banking business units in four countries (The Netherlands, Belgium, Spain and Germany), a subsidiary in the United Kingdom and additional exposures in, among others, France and Ireland.

Triodos Bank does not set country limits for the countries it operates in as long as these countries have a credit rating of AA- or better. Specific limits are defined for countries with a credit rating of A+ or lower.

Obligor risk

An obligor is a single legal entity that commits to the terms and conditions of a loan agreement. The obligor is thoroughly analysed on meeting Triodos Bank's lending criteria and its capacity to repay a loan. The risk related to the obligor is that it fails to meet its contractual obligations. Obligors are rated through an internal rating methodology.

A thorough assessment of each obligor and the structure of their loan is made before any loan is provided. A review of approved credit is made once a year, as a minimum, to assess the evolution of the client's capacity to meet its obligations. The high quality of securities (collateral) against outstanding loans reduces credit risk. Examples of principal collateral include: mortgage registrations for business or private properties, securities from public authorities, companies or private individuals, and rights of lien on receivables and/or contracts for projects.

Triodos Bank aims to finance specific projects and assets that are in line with its mission. When financing a project, the bank has a pledge on the underlying contracts. For the financing of objects, Triodos Bank will take a pledge or mortgage on the specific object. It applies haircuts, in all cases, on the market value. The level of this haircut will depend on the marketability of the asset in a negative scenario. This allows Triodos Bank to make a proper assessment of the overall risk of the loan and the value of the asset in case of a downturn. The value of the collateral is reviewed on a yearly basis. An external valuation by an expert is requested, at a minimum every three years, for large loans with a mortgage.

The Triodos Bank early-warning system helps identify problem loans early on, to allow for more available options and remedial measures. Once a loan is identified as being in default (i.e. unlikely to pay or overdue payments beyond 90 days), it is managed under a dedicated remedial process, with a focus on full recovery.

Group exposures

The risk related to a group is that if one obligor fails to meet its contractual obligations, so will the remaining obligors within the group. A group is defined as two or more obligors that are interrelated in such a way that they are considered as a single risk.

Each group obligor and the group as a whole are analysed on all aspects, from meeting Triodos Bank's lending criteria to their capacity to repay the loan.

Credit risk investment portfolio

Liquidity not invested in loans to customers is invested in deposits with banks (including central banks) or bonds. Triodos Bank's policy is to primarily invest the liquidity in the countries where it has branches or subsidiaries. The bond portfolio of Triodos Bank comprises (local) government bonds (from countries where Triodos Bank has a branch or subsidiary) and investment-grade bonds issued by European supranational organisations (e.g. European Investment Bank), European financial institutions and corporates.

There are no regulatory restrictions to exposures on governments. Triodos Bank sets limits based on the country risk.

There are also no regulatory restrictions to exposures on multilateral development banks where the institution has a credit risk weight of 0% for regulatory capital requirements. Triodos Bank has set limits to avoid concentration risk in these exposures.

Credit risk banks

Banks are selected according to their creditworthiness and screened on their sustainability performance. Exceptions can only occur when in a country no banks meet our minimum sustainability standards. In such cases, deposit maturity periods will not exceed three months. All counterparty limits for banks are set by either the Executive Board or the Central Credit Committee. Banking business units place excess liquidity with the country's central banks (minimum reserve requirements and deposit facility). There are no regulatory restrictions on exposures to central banks.

The Capital Requirements Regulation large exposures regime limits the maximum exposure to a bank at 25% of its Tier 1 capital plus (if available) Tier 2 with a maximum of one-third of Tier 1 capital. To avoid the interbank exposure exceeding the regulatory maximum, Triodos Bank applies a maximum exposure below the limit defined by the large exposures regime. Limits are further adapted according to the external rating of the counterparty. Deposits on banks are limited to a maximum maturity of one year.

Credit risk private mortgages

Private mortgages are treated as a sector and form an integral part of the impact strategy of the bank. Interest rate differentiation on the mortgages based on energy labels incentivises lower energy consumption. In general, mortgage products are highly standardised and regulated. This is the case in the three countries we offer this product. The amounts in the portfolio are usually small and the portfolio is often well diversified (e.g. in terms of geography, source of repayment or maturity). This mitigates credit risk to a large degree, which is evidenced by low defaults. Triodos Bank limits the overall exposure to mortgages as a percentage of the balance sheet to have a balanced mix between business loans and mortgages to private individuals.

Credit risk related to derivatives

Triodos Bank has exposure to credit risk resulting from outstanding foreign exchange (FX) contracts (spot, forward and swap transactions) with financial institutions and with funds managed by Triodos Investment Management. Triodos Bank serviced these funds by providing hedges for the FX risk of these funds' investments.

Triodos Bank is not entering into new FX deals with Triodos Investment Funds because of new regulation. Current derivative contracts will not be renewed after maturity.

Triodos Bank has limited exposure to credit risk resulting from outstanding interest rate swaps (IRS). The IRS are all centrally cleared with LCH Clearnet. Daily margining minimises the (potential) credit risks.

A limit is set per counterparty based on the expected amount of outstanding FX transactions and the corresponding expected exposure. This limit is subject to the overall counterparty limit Triodos Bank has per counterparty.

Any collateral needed for FX transactions is calculated and managed daily. In the liquidity stress tests, the amount of collateral needed for FX transactions is stressed to calculate the potential impact on Triodos Bank's liquidity position.

Credit quality of assets

Business loans in the portfolio are periodically reviewed on an individual basis. Their frequency depends on the debtor's creditworthiness, the degree of market exposure and the market in which the debtor operates. Small business and private loans are reviewed at portfolio level, and on an individual basis when appropriate.

The credit committees discuss and, if necessary, take action with respect to overdue payments from debtors. If there is any doubt regarding the continuity of the debtor's core operations and/or a debtor fails to settle agreed interest and repayment instalments for a prolonged period, this debtor falls under the category of doubtful debtors and will be managed intensively.

Provisions for loan losses are taken for doubtful debtors at an individual level based on the difference between the total amount of the debtor's outstanding liability to Triodos Bank and the future expected cash flows, discounted at the original effective interest rate of the contract. These individual provisions include provisions for concessions or refinancing given to debtors who face financial difficulties. They are only granted to the debtor in question in order to overcome their difficulties in these exceptional circumstances. These are described as forbearance measures.

The credit risk in the loan portfolio is reported each month to the Central Credit Committee, and quarterly to the Audit and Risk Committee as part of the Enterprise Risk Management report.

In addition to our check on minimum standards, external credit ratings – if available – are used to determine the creditworthiness of the counterparties of our investment portfolio, including banks and some corporates. External ratings are also used to calculate the minimum capital requirement for credit risk under the standardised approach. For this purpose, we use the ratings of Fitch and Moody's.

Credit risk quantitative disclosures

Credit quality analysis

The following tables set out information about the credit quality of financial assets, loan commitments and guarantee contracts. Unless specifically indicated, for financial assets the amounts in the table represent gross carrying amounts. For loan commitments and financial guarantee contracts, the amounts in the table represent, respectively, the amounts committed or guaranteed.

The following table shows the loans and advances to banks at amortised cost, which are all in stage 1.

Loans and advances to banks at amortised cost	2022	2021
Amounts in thousands of EUR	**Stage 1**	**Stage 1**
Gross amount	332,500	265,820
Allowance for expected credit losses	-7	-24
Carrying amount	**332,493**	**265,796**

Triodos Bank applies ratings to its loans and advances to customers based on its credit risk policy. Within the policy, clients with total business loans above EUR 250 thousand are rated. Clients with retail mortgage loans and total business loans below EUR 250 thousand have no rating appointed. These are represented in the Not rated category. The below table shows the loans and advances to customers within the rating categories.

Loans and advances to customers at amortised cost	2022			
Amounts in thousands of EUR	**Stage 1**	**Stage 2**	**Stage 3**	**Total**
Rating 1-9: Normal risk	4,568,561	1,181,486	-	5,750,047
Rating 10-13: Increased risk	142	189,048	-	189,190
Rating 14: Default	-	-	314,121	314,121
Not rated — business loans	95,070	24,429	-	119,499
Not rated — mortgages	4,285,682	12,354	-	4,298,036
Gross amount	**8,949,455**	**1,407,317**	**314,121**	**10,670,893**
Allowance for expected credit losses	-6,314	-5,695	-39,208	-51,217
Carrying amount	**8,943,141**	**1,401,622**	**274,913**	**10,619,676**

Loans and advances to customers at amortised cost	2021			
Amounts in thousands of EUR	**Stage 1**	**Stage 2**	**Stage 3**	**Total**
Rating 1-9: Normal risk	5,519,854	586,885	-	6,106,739
Rating 10-13: Increased risk	24,364	135,437	-	159,801
Rating 14: Default	-	-	244,320	244,320
Not rated — business loans	133,571	8,945	-	142,516
Not rated — mortgages	3,537,624	25,778	-	3,563,402
Gross amount	**9,215,413**	**757,045**	**244,320**	**10,216,778**
Allowance for expected credit losses	-8,675	-3,418	-36,887	-48,980
Carrying amount	**9,206,738**	**753,627**	**207,433**	**10,167,798**

The following table sets out information about the overdue status of loans and advances to customers in Stages 1, 2 and 3.

Loans and advances to customers at amortised cost	**2022**			
Amounts in thousands of EUR	**Stage 1**	**Stage 2**	**Stage 3**	**Total**
Current	8,871,917	1,376,413	-	10,248,330
Overdue < 90 days	77,538	30,904	-	108,442
Overdue > 90 days	-	-	314,121	314,121
Total	**8,949,455**	**1,407,317**	**314,121**	**10,670,893**

Loans and advances to customers at amortised cost	**2021**			
Amounts in thousands of EUR	**Stage 1**	**Stage 2**	**Stage 3**	**Total**
Current	9,215,413	751,907	-	9,967,320
Overdue < 90 days	-	5,138	-	5,138
Overdue > 90 days	-	-	244,320	244,320
Total	**9,215,413**	**757,045**	**244,320**	**10,216,778**

All debt securities at amortised cost are within stage 1. The below table sets out the debt securities per rating.

Debt securities at amortised cost	**2022**	**2021**
Amounts in thousands of EUR	**Stage 1**	**Stage 1**
AAA	656,768	34,263
AA	587,417	509,173
A	390,156	539,528
BBB	55,471	400,424
Allowance for expected credit losses	-32	-10
Carrying amount	**1,689,780**	**1,483,378**

The expected credit loss (ECL) of loan commitments is determined based on the business loans and mortgage loans portfolios. The outcome is presented in the table below.

Loan commitments		**2022**	
Amounts in thousands of EUR	**Stage 1**	**Stage 2**	**Total**
Gross commitment amount (off-balance)	723,419	168,862	892,281
Allowance for expected credit losses (recognised as provision on balance sheet)	-645	-531	-1,176
Carrying amount	**722,774**	**168,331**	**891,105**

Loan commitments		**2021**	
Amounts in thousands of EUR	**Stage 1**	**Stage 2**	**Total**
Gross commitment amount (off-balance)	1,065,319	77,377	1,142,696
Allowance for expected credit losses (recognised as provision on balance sheet)	-1,103	-292	-1,395
Carrying amount	**1,064,216**	**77,085**	**1,141,301**

All financial guarantee contracts are within stage 1 and stage 2 as shown in the table below.

Financial guarantee contracts		**2022**			**2021**	
Amounts in thousands of EUR	**Stage 1**	**Stage 2**	**Total**	**Stage 1**	**Stage 2**	**Total**
Gross carrying amount	22,044	4,946	26,990	37,712	-	37,712
Allowance for expected credit losses (recognised as provision on balance sheet)	-41	-81	-122	-21	-	-21
Carrying amount	**22,003**	**4,865**	**26,868**	**37,691**	**-**	**37,691**

Collateral held and other credit enhancements

Triodos Bank can hold collateral and other credit enhancements against certain of its credit exposures. The following table sets out the principal types of collateral held against different types of financial assets.

	Percentage of exposure that is subject to collateral requirements		
	2022	**2021**	**Principal type of collateral held**
Non-trading derivatives	100	100	Cash collective
Loans and advances to customers			
Mortgage lending	98	98	Residential property
Business lending	60	63	Commercial property, Other
Current accounts	-	-	None

The following table stratifies credit exposures from mortgage loans and advances to retail customers by ranges of loan-to-value (LTV) ratio. LTV is calculated as the ratio of the gross amount of the loan – or the amount committed for loan commitments – to the value of the collateral. The valuation of the collateral excludes any adjustments for obtaining and selling the collateral. The value of the collateral for residential mortgage loans is based on the collateral value at origination updated according to changes in house price indices. For credit-impaired loans the value of collateral is based on the most recent appraisals.

LTV ratio (amounts in thousands of EUR)	2022	2021
Less than 65%	2,833,441	1,669,593
65-75%	366,903	501,592
75-90%	641,469	609,655
More than 90%	605,356	840,288
Total residential mortgage lending	**4,447,170**	**3,621,128**

Details of financial and non-financial assets obtained during the year by taking possession of collateral held as security against loans and advances and held at the year-end are shown below.

Amounts in thousands of EUR	2022	2021
Property	180	81

Triodos Bank sometimes repossesses assets. These assets are collaterals of an executed loan. A part of the repossessed assets however will not be sold immediately because Triodos Bank has opted to add value by letting these assets; these are therefore presented as investment properties.

Allowance for expected credit losses

The following tables show reconciliations from the opening to the closing balance of the allowance for expected credit losses by class of financial instrument.

Triodos Bank uses three stages to classify the expected credit loss (ECL) for financial instruments. The ECL for stages 1 and 2 is determined by the probability of default (PD), the loss given default (LGD) and the exposure at default (EAD) per exposure, which are determined with the use of a model that includes several drivers. These drivers can be client-specific or based on macro-economic scenarios.
• Stage 1 includes the financial instruments that have (close to) similar credit risk since origination. For this category ECL is determined based on the PD, LGD, and EAD over the 12 months after balance sheet date.
• Stage 2 includes the financial instruments which have had a significant increase in credit risk since origination. The ECL for stage 2 is determined based on the PD, LGD, and EAD over the entire lifetime of the financial instrument.
• Stage 3 includes the financial instruments which are in default. The ECL for this stage is also determined over the entire lifetime, considering default-specific scenarios.

The ECL provision represents an estimate of the expected credit loss over the current portfolio. The future development of the underlying parameters can influence this estimate positively (or negatively) leading to a decrease (or increase) of expected credit losses in future periods. If economic growth is expected to develop positively in future periods, fewer defaults are expected. This will have a positive effect on the ECL and result in lower ECL provision for stage 1 and 2.

Newly originated financial instruments are initially included in stage 1. Changes in ratings of clients may trigger reclassification in different stages. When a rating declines significantly, the loan is transferred from stage 1 to stage 2. If the decline persists and the loan goes into default, it is moved into stage 3. In case the default is cured and the credit rating goes up, the loan can be transferred back to stage 2 or stage 1 after a probation period.

When the drivers of the PD and LGD are changed, the ECL amounts per financial instrument are recalculated. This is captured in the net remeasurement of allowance for expected credit losses. The net remeasurement can be broken down into multiple parameters that influence the PD and LGD:
1. remeasurement in calculated ECL of individual loans which have transferred between stage 1 and stage 2;
2. changes in forward-looking macro-economic scenarios;
3. changes in individual loan or advance behaviour such as changes in rating not triggering stage transfer or loan amount due to repayment.

The total expected credit loss allowances can be broken down as follows:

Total expected credit loss allowances	2022			
Amounts in thousands of EUR	**Stage 1**	**Stage 2**	**Stage 3**	**Total**
ECL loans and advances to banks at amortised cost	7	-	-	7
ECL loans and advances to customers at amortised cost — business loans and current accounts	5,622	5,281	38,900	49,803
ECL loans and advances to customers at amortised cost — mortgages	692	414	308	1,414
ECL debt securities at amortised cost	32	-	-	32
ECL financial guarantees	41	80	-	121
ECL loan commitments issued	645	531	-	1,176
ECL other assets	12	-	476	488
Total expected credit loss allowances	**7,051**	**6,306**	**39,684**	**53,041**

Total expected credit loss allowances	2021			
Amounts in thousands of EUR	**Stage 1**	**Stage 2**	**Stage 3**	**Total**
ECL loans and advances to banks at amortised cost	24	-	-	24
ECL loans and advances to customers at amortised cost — business loans and current accounts	8,058	3,057	36,787	47,902
ECL loans and advances to customers at amortised cost — mortgages	617	361	100	1,078
ECL debt securities at amortised cost	10	-	-	10
ECL financial guarantees	21	-	-	21
ECL loan commitments issued	1,103	292	-	1,395
ECL other assets	12	-	1,107	1,119
Total expected credit loss allowances	**9,845**	**3,710**	**37,994**	**51,549**

The table on the next page presents the movements of the ECL allowance. For the movements of the ECL allowances per financial instrument, refer to the relevant notes of each financial instrument.

Expected credit losses		2022		
Amounts in thousands of EUR	**Stage 1**	**Stage 2**	**Stage 3**	**Total**
Balance at 1 January	9,845	3,710	37,994	51,549
Net remeasurement of allowance for expected credit losses	-2,770	2,226	8,092	7,548
of which:				
- Effect of transition between stages	-1,078	2,636	510	2,068
- Macro-economic forward-looking impact	-2,567	-106	-	-2,673
- Individual loan or advance behaviour	455	113	7,582	8,150
- Update ECL model	420	-417	-	3
Net portfolio growth	43	438	-	481
Other transfers	-	-	-	-
Write-offs	-	-	-6,033	-6,033
Exchange rate differences	-67	-68	-369	-504
Balance at 31 December	**7,051**	**6,306**	**39,684**	**53,041**

Expected credit losses		2021		
Amounts in thousands of EUR	**Stage 1**	**Stage 2**	**Stage 3**	**Total**
Balance at 1 January	9,277	10,592	34,133	54,002
Net remeasurement of allowance for expected credit losses	-868	-6,803	6,025	-1,646
of which:				
- Effect of transition between stages	851	-266	395	980
- Macro-economic forward-looking impact	-3,942	-7,221	-	-11,163
- Individual loan or advance behaviour	1,317	1,450	5,630	8,397
- Update ECL model	906	-766	-	140
Net portfolio growth	1,342	-196	-	1,146
Other transfers	-	-	-	-
Write-offs	-	-	-2,306	-2,306
Exchange rate differences	94	117	142	353
Balance at 31 December	**9,845**	**3,710**	**37,994**	**51,549**

Allowance for expected credit losses reconciliation to statement of profit or loss

The following table provides a reconciliation between:

- amounts shown in the above tables reconciling opening and closing balances of allowance for expected credit losses per class of financial instrument; and
- the 'impairment losses on financial instruments' line item in the consolidated statement of profit or loss and other comprehensive income, refer to 29 Impairment result on financial instruments.

Impairment result on financial instruments	2022			
Amounts in thousands of EUR	**Stage 1**	**Stage 2**	**Stage 3**	**Total**
Loans and advances to banks	-18	-	-	**-18**
Loans and advances to customers	-2,286	2,359	8,076	**8,149**
Debts securities at amortised cost	21	-	-	**21**
Financial guarantees	20	79	-	**99**
Loan commitments issued	-465	222	-	**-243**
Other assets	-	-	15	**15**
Impairment result on financial instruments for the year	**-2,728**	**2,660**	**8,091**	**8,023**

Impairment result on financial instruments	2021			
Amounts in thousands of EUR	**Stage 1**	**Stage 2**	**Stage 3**	**Total**
Loans and advances to banks	6	-	-	**6**
Loans and advances to customers	447	-6,067	5,613	**-7**
Debts securities at amortised cost	-53	-	-	**-53**
Financial guarantees	7	-	-	**7**
Loan commitments issued	65	-932	-	**-867**
Other assets	3	-	411	**414**
Impairment result on financial instruments for the year	**475**	**-6,999**	**6,024**	**-500**

Triodos Bank has an annual incurred loss rate of 8 bps (2021: 6 bps). The annual incurred loss rate is the ratio of stage 3 impairment losses over the average loan book.

Credit-impaired financial assets

The following table sets out a reconciliation of changes in the net carrying amount of credit- impaired loans and advances to customers.

Amounts in thousands of EUR	2022	2021
Credit-impaired loans and advances to customers at 1 January	36,887	33,438
Addition	15,574	11,662
Write-off	-5,386	-2,306
Release	-7,498	-6,049
Exchange rate differences	-369	142
Balance sheet value as at 31 December	**39,208**	**36,887**

Modified financial assets

The following table provides information on financial assets that were modified during the reporting period. The net modification result comprises the modification result minus modification fees or penalty interest received.

Amounts in thousands of EUR	2022	2021
Financial assets modified during the period		
Amortised cost before modification	56,110	92,441
Net modification result	268	-27

Offsetting financial assets and financial liabilities

Triodos Bank does not make use of any netting under master agreements for its financial instruments.

The International Swaps and Derivatives Association (ISDA) and similar master netting arrangements do not meet the criteria for offsetting in the statement of financial position. This is because they create a right of set-off of recognised amounts that is enforceable only following an event of default, insolvency or bankruptcy of the Group or the counterparties or following other predetermined events. In addition, Triodos Bank and its counterparties do not intend to settle on a net basis or to realise the assets and settle the liabilities simultaneously.

Triodos Bank receives and gives collateral in the form of cash in respect of the derivatives held for risk management. This collateral is subject to standard industry terms including, when appropriate, an ISDA credit support annex. This means that securities received/given as collateral can be pledged or sold during the term of the transaction but have to be returned on maturity of the transaction. The terms also give each party the right to terminate the related transactions on the counterparty's failure to post collateral.

The impact of potential collateral requirements is increasing at Triodos Bank. The amount deposited with central and commercial banks for payment system purposes increased in 2022 and is expected to increase further with the growth of Triodos Bank.

Collateral needs stemming from FX forwards decreased in 2022 because of EUR/GBP exchange rate developments. At the end of 2022, a total net amount of EUR 6.7 million cash collateral was posted (2021: EUR 13.5 million).

Interest rate swaps are centrally cleared with LCH Clearnet. At the end of 2022, a total net amount of EUR 73 million cash collateral was posted for initial margin requirements. Due to the increase in interest rates in 2022 the variation margin resulted in cash collateral received of EUR 284.9 million at the end of 2022. Both the cash collateral received and placed are part of the clearing agreement.

Debt securities and loans are deposited with the Dutch Central Bank for a possible debit balance and participation in open market operations of the European Central Bank. At the end of 2022, a collateral value of EUR 2,373 million was deposited with the Dutch Central Bank (2021: EUR 1,749 million).

Liquidity risk

Liquidity risk management

Triodos Bank only lends to and invests in sustainable enterprises in the real economy. Funds are attracted from depositors and shareholders, supplemented with the issuance in 2021 of a green subordinated Tier 2 bond, which diversified the capital and funding base of the bank.

Triodos Bank does not invest in complex financial instruments with leverage features. The growth of the bank is primarily driven by steadily growing sustainable lending (asset side) and solid growth of funds entrusted (liability side). Triodos Bank is managing a sufficient liquidity buffer supporting a healthy and resilient liquidity coverage ratio (LCR). Triodos Bank does not act as correspondent bank, which minimises changes of liquidity shortages during the day.

As a mid-sized European bank with total funds entrusted of EUR 13,816 million per the end of December 2022, liquidity risk is an important risk for Triodos Bank. The bank has intensively worked on the development of a solid liquidity framework always to have sufficient funds to meet sudden and (un)expected short-term liquidity needs. The high cash liquidity buffer in combination with a high-quality investment portfolio reflects the low risk appetite for liquidity risk.

For its funding, Triodos Bank mainly depends on funds entrusted from retail and business banking clients, consisting of current accounts, saving accounts and fixed-term accounts.

The liquidity portfolio decreased in 2022 due to repayment of our participation in the targeted longer-term refinancing operation (TLTRO) of the euro system. Triodos Bank's policy is to hold a sound liquidity buffer. Liquidity is invested according to Triodos Bank's minimum standards on sustainability, in highly liquid assets and (short-term) cash loans, which count as inflow in the liquidity coverage ratio (LCR) 30 days before maturity. Around forty percent of our liquidity is invested, mainly in bonds and to a small extent in cash loans. The rest is mainly placed at the current accounts of the national central banks of Triodos Bank's local business units and, to some extent, at sight with commercial banks to facilitate payment systems. Most bonds qualify as high-quality liquid assets (HQLA) and are issued by central governments, regional governments and/or agencies in the Netherlands, Belgium, Spain, Germany and the UK without a solvency weight. There are small positions in some green bonds issued by banks and corporates for reasons of diversification.

Liquidity risk management organisation

In the Three Lines Model, the Treasury department is, as owner of liquidity risk, the first line. Recently, also a second line risk management function has been established for liquidity and market risk.

Daily liquidity management is currently executed at banking entity level. This reflects Triodos Bank's business strategy of keeping this process close to client-related activities so as to be able to provide detailed cash forecasts. At the aggregated level, Group Treasury monitors the liquidity buffer versus the internal limits daily.

Triodos Bank has the following committees for managing liquidity risk:

- The Enterprise Risk Committee oversees liquidity risk as a focus area of financial risks.

- The Asset and Liability Committee serves as delegated body by the Executive Board to monitor and take decisions related to the management of liquidity risk positions of Triodos Bank to make sure that they are in line with the defined liquidity risk appetite. General roles and responsibilities are defined in the Asset and Liability Committee charter.

The management of the liquidity position under ‘normal’ conditions is described in the Liquidity Risk Management policy. Whenever circumstances require an exception to this policy, which is nevertheless prudent, the Chief Financial Officer (CFO) is authorised to approve the policy exception. No such exception may be authorised, however, if it would cause the bank to violate an applicable law or regulation. All authorised policy exceptions must be reported to the Asset and Liability Committee and must be affirmed by the Asset and Liability Committee.

Reporting and measurement systems

Triodos Bank monitors and reports its liquidity position at different levels and frequencies. Firstly, the total liquidity position is monitored by Group Treasury and the individual banking business units on a daily basis. Secondly, the detailed liquidity position is reported to the Chief Financial Officer (CFO) and Chief Risk Officer (CRO) on a weekly basis. Finally, every month the liquidity ratios are reported to the Asset and Liability Committee. The main liquidity ratios are part of the quarterly ERM report.

Liquidity Risk Management policy

The liquidity buffer is the source of funds in case of liquidity needs. The Cash and Liquidity Management policy describes the requirements related to liquidity placements, investments and the investment portfolio, where the goal is to optimise the risk-return trade-off in a manner consistent with the mission and vision of Triodos Bank.

The Liquidity Risk Management policy describes the actions to manage the liquidity position of Triodos Bank.

The Internal Liquidity Adequacy Assessment Process (ILAAP) assesses Triodos Bank’s liquidity adequacy and liquidity management during normal business activities and in times of stress. This process is performed at least once a year and the results are submitted to DNB as part of the Supervisory Review and Evaluation Process (SREP). The ILAAP Report is an internal document. The goal of this report is to properly evaluate liquidity and funding risks and Triodos Bank’s corresponding liquidity levels and the quality of liquidity management.

Contingency funding plans

The Liquidity Contingency Plan and the Recovery Plan describe the main items that should be considered in managing the liquidity position of Triodos Bank in a ‘stressed situation’. This includes liquidity stress indicators and trigger levels for management actions.

To increase the possibility of recovery in periods of liquidity stress, Triodos Bank executed an increase of the retained securitisation transaction of Dutch mortgage loans (Sinopel 2019) in 2022 and mobilised extra credit claims (loans to regional government entities) to the euro system as collateral to be able to participate in monetary (liquidity providing) operations.

Stress testing

Triodos Bank manages the liquidity position to withstand a liquidity crisis without damaging the ongoing viability of its business. The potential but unlikely event of an upcoming liquidity crisis requires a set of early-warning indicators and triggers, a set of potential early-warning and recovery measures, and a dedicated organisation, including a communication strategy, to handle such a crisis. A list of potential early-warning and recovery measures is included in the Recovery Plan. The other aspects mentioned are described in the Liquidity Contingency Plan.

The EB has delegated responsibility to the Asset and Liability Committee with regard to the overall management and procedure of liquidity stress testing. The liquidity stress testing within the framework of the mandate is delegated to Group Treasury. Group Modelling and Valuations manages the liquidity stress testing models.

Triodos Bank conducts liquidity stress tests on a monthly basis.

Declaration

A robust framework is in place at Triodos Bank to identify, measure and manage liquidity risk in line with Basel Committee on Banking Supervision / European Banking Authority principles. An integrated overview of the Group cash position and liquidity metrics is available on a daily and weekly basis.

Liquidity risk statement

Triodos Bank uses funds entrusted for lending purposes that have a positive impact on society. Triodos Bank wants to meet its obligations to all clients at all times without incurring additional costs and/or resulting in reputational issues. Triodos Bank therefore has a low risk appetite for liquidity risk with limits regarding the size and quality of the liquidity buffer accordingly.

Triodos Bank ensures availability of a sufficient liquidity buffer of high credit quality and a stable funding base. The total amount of funds entrusted is EUR 13,816 million at year-end 2022 of which 76.2% are deposits insured by the deposit guarantee scheme.

In 2022, the undrawn credit lines granted by central banks increased from EUR 224 million ultimo 2021 to EUR 1,527 million ultimo 2022 because of the ending of the participation in the targeted long-term refinancing operation of the euro system in November and an additional amount of Sinopel 2019 Class A notes deposited at DNB. The remaining collateral needs stem from market value changes in interest rate swap positions (to manage the interest rate risks) and in FX forwards (because of hedging the currency risk of the UK subsidiary equity participation of Triodos Bank), which are cash collateral requirements.

Interest rate swaps are centrally cleared with LCH Clearnet. At the end of 2022, a total net amount of EUR 73 million cash collateral was posted for initial margin requirements. Due to the increase in interest rates in 2022 the variation margin resulted in cash collateral received of EUR 285 million at the end of 2022. Both the cash collateral received and placed are part of the clearing agreement.

Debt securities (including the Class A notes of Sinopel 2019) and loans are used as collateral with the Dutch Central Bank for a possible debit balance and participation in open market operations of the European Central Bank. In 2022, Triodos Bank repaid the participation in two TLTROs for an amount of EUR 1,550 million, freeing up collateral. Still, in total an amount of EUR 2,373 million was placed as collateral with the Dutch Central Bank at year-end (2021: EUR 1,749 million). This increase is mainly caused by the increase in Class A notes due to the restructuring of the RMBS transaction Sinopel 2019 which took place in November 2022.

The liquidity risk appetite as determined by the Executive Board and Enterprise Risk Committee (ERC) is reviewed and approved by the Supervisory Board. With this governance structure in place, the risk appetite regarding liquidity is well anchored within the senior management team of the bank. The Three Lines Model organisational structure, with independent control, compliance, audit and risk management functions, ensures a clear division of tasks, power and responsibility is in place.

Periodically, the Liquidity Contingency Plan is tested and reviewed thoroughly to achieve a solid crisis management structure in case a liquidity crisis at Triodos Bank emerges.

A limit structure is in place to manage the inherent funding mismatch other than in exceptional circumstances. Triodos Bank follows the Basel Committee on Banking Supervision (BCBS)/EBA principles considering its sustainable profile, the very strong relationship with its customers, the granularity of funds entrusted and the conservative and robust liquidity management framework it has integrated in its business processes.

Triodos Bank has a sufficient, good quality liquidity buffer resulting in a proper liquidity coverage ratio (LCR) and a proper net stable funding ratio (NSFR) above regulatory minimum requirements. In all liquidity stress-test scenarios (with the exception of reverse stress-test scenarios) Triodos Bank has sufficient liquidity to survive the total stress period.

The increased levels of interest rates in 2022 have a positive impact on the returns made on the liquidity buffer. This has influenced the trade-off between having sufficient liquidity versus the costs of holding that liquidity. In 2022, the liquidity buffer started to be a contributor to the bank's overall profitability.

Securitisation

In 2022, Triodos increased its retained residential mortgage-backed securities (RMBS) transaction called Sinopel 2019 B.V. (Sinopel) in order to further increase the liquidity contingency potential. A securitisation is a transaction where a pool of assets is sold to a special purpose vehicle (SPV). The special purpose vehicle issues notes with different tranches to finance the purchase price of the assets. Sinopel 2019 adheres to the simple transparent and standardised (STS) securitisation framework.

With Sinopel, Triodos Bank structured a retained RMBS whereby Triodos Bank is the sole buyer of the issued notes and as such has not transferred any credit risk. Through the retained RMBS, Triodos Bank strengthens its financial resilience and gains additional access to (central bank) liquidity by pledging the notes as collateral with DNB. The Sinopel RMBS is collateralised by Dutch residential mortgage loans. The structure is fully compliant with the EU’s STS regulation. DBRS Ratings Limited and S&P Global Ratings

Europe were external credit assessment institutions (ECAIs) for notes issued by Sinopel 2019 B.V.; they have reaffirmed their ratings in 2022 for the increase of notes issued under the Sinopel transaction.

As there is no risk transfer with the Sinopel transaction, the securitisation exposures (notes) are not separately risk weighted. The securitised assets (mortgage loans) are taken into account as if they were not securitised. Triodos Bank consolidates Sinopel in its annual accounts.

Apart from the Sinopel transaction Triodos Bank is not active as originator, investor or sponsor of securitisation exposures. As a result, Triodos Bank does not hold any re-securitisation positions and does not provide securitisation-related services to any other SPV.

The Class A notes of the retained securitisation are deposited as collateral with the Dutch central bank. The collateral value of the Class A notes deposited as collateral is EUR 1,346.5 million (2021: EUR 568.8 million) reflecting the restructuring of the Sinopel 2019 transaction in 2022.

Quantitative liquidity risk disclosures

Maturity analysis for financial liabilities and financial assets

The following tables set out the earliest possible contractual maturities of Triodos Bank's financial liabilities and financial assets.

2022 Amounts in thousands of EUR	Less than 1 month[1]	1–3 months
Financial asset by type		
Cash and cash equivalents	2,581,140	-
Loans and advances to banks	186,444	1,358
Loans and advances to customers	160,530	451,023
Debt securities at amortised cost	75,296	55,765
Investment securities	-	-
Non-trading derivatives	430	3,709
Other assets[2]	23,942	7,519
Total assets	**3,027,782**	**519,374**
Financial liability by type		
Deposits from banks	284,881	80
Deposits from customers	13,049,386	382,973
Non-trading derivatives	-	8
Debt issued and other borrowed funds	-	5,116
Other liabilities[3]	76,201	14,832
Total liabilities	**13,410,468**	**403,009**
Off-balance sheet liabilities by type		
Contingent liabilities	4,058	160
Irrevocable facilities	99,198	55,204
Total off-balance sheet liabilities	**103,256**	**55,364**

[1] Includes assets and liabilities on demand.
[2] Includes intangible assets, property and equipment, investment property, right-of-use assets, deferred tax assets, other assets and non-curre
[3] Includes lease liabilities, deferred tax liabilities, current tax liability and other liabilities as presented in the consolidated balance sheet.

3 months –1 year	1–5 years	More than 5 years	No maturity	Total
-	-	-	-	2,581,140
-	-	-	144,691	332,493
972,909	3,672,590	5,362,624	-	10,619,676
286,967	1,113,554	158,198	-	1,689,780
-	-	-	45,718	45,718
1,399	6,527	283,631	-	295,696
10,091	3,659	10,059	180,707	235,977
1,271,366	**4,796,330**	**5,814,512**	**371,116**	**15,800,480**
-	29,730	22,396	-	337,087
248,409	109,685	25,887	-	13,816,340
1,241	-	-	-	1,249
-	-	254,768	-	259,884
15,103	10,955	7,894	1,540	126,525
264,753	**150,370**	**310,945**	**1,540**	**14,541,085**
1,549	5,866	37,439	-	49,072
233,729	630,421	834,615	-	1,853,167
235,278	**636,287**	**872,054**	**-**	**1,902,239**

nt assets held for sale as presented in the consolidated balance sheet.

2021 Amounts in thousands of EUR	Less than 1 month[1]	1–3 months
Financial asset by type		
Cash and cash equivalents	4,277,589	-
Loans and advances to banks	145,217	1,426
Loans and advances to customers	186,558	520,850
Debt securities at amortised cost	54,289	26,290
Investment securities	-	-
Non-trading derivatives	-	-
Other assets[2]	32,812	10,571
Total assets	**4,696,465**	**559,137**
Financial liability by type		
Deposits from banks	13,460	2,815
Deposits from customers	12,460,790	355,454
Non-trading derivatives	1,176	1,408
Debt issued and other borrowed funds	-	-
Other liabilities[3]	48,707	7,566
Total liabilities	**12,524,133**	**367,243**
Off-balance sheet liabilities by type		
Contingent liabilities	3,033	325
Irrevocable facilities	116,740	53,068
Total off-balance sheet liabilities	**119,773**	**53,393**

[1] Includes assets and liabilities on demand.
[2] Includes intangible assets, property and equipment, investment property, right-of-use assets, deferred tax assets, other assets and non-curre
[3] Includes lease liabilities, deferred tax liabilities, current tax liability and other liabilities as presented in the consolidated balance sheet.

3 months –1 year	1–5 years	More than 5 years	No maturity	Total
-	-	-	-	4,277,589
-	1,000	-	118,153	265,796
896,227	3,600,046	4,964,117	-	10,167,798
399,691	801,118	201,990	-	1,483,378
-	-	-	39,976	39,976
695	1,104	17,851	-	19,650
4,807	3,734	3,727	194,347	249,998
1,301,420	**4,407,002**	**5,187,685**	**352,476**	**16,504,185**
1,536,708	14,513	40,810	-	1,608,306
279,934	155,121	33,773	-	13,285,072
1,083	3,166	114	-	6,947
916	-	254,699	-	255,615
17,122	16,433	8,018	277	98,123
1,835,763	**189,233**	**337,414**	**277**	**15,254,063**
6,676	11,197	50,813	-	72,044
251,860	788,548	902,908	-	2,113,124
258,536	**799,745**	**953,721**	**-**	**2,185,168**

nt assets held for sale as presented in the consolidated balance sheet.

The amounts in the table above have been compiled as follows:

Type of financial instrument	Basis on which amounts are compiled
Non-derivative financial liabilities and financial assets	Undiscounted cash flows, which include estimated interest payments.
Contingent and irrevocable facilities	Contractual maturity date of the off-balance facility. Contingent facilities relate to credit and non-credit substitute guarantees. Credit substitute guarantees are guarantees to customers for loans provided to these customers by other banks. Non-credit substitute guarantees are guarantees to customers for all other obligations of these customers to third parties. Many of these guarantees are expected to expire without being drawn on and therefore do not necessarily represent future cash outflows. Irrevocable facilities mainly constitute accepted loans not yet paid out. Many of these facilities are for a fixed duration and bear interest at a floating rate.
Derivative financial liabilities and financial assets held for risk management purposes	Contractual undiscounted cash flows. The amounts shown are the gross nominal inflows and outflows for derivatives that have simultaneous gross settlement (e.g. forward exchange contracts and currency swaps) and the net amounts for derivatives that are net settled.

Triodos Bank's expected cash flows on some financial assets and financial liabilities can vary significantly from the contractual cash flows. The principal differences are as follows:

- demand deposits from customers are expected to remain stable or increase;
- unrecognised loan commitments are not all expected to be drawn down immediately; and
- retail mortgage loans have an original contractual maturity of up to 35 years, however early repayment options and refinancing is expected within the mortgage portfolio.

Liquidity reserves

Amounts in thousands of EUR	2022 Carrying amount	2021 Carrying amount
Balances with central banks	2,581,140	4,277,589
Cash and balances with other banks	332,493	265,796
Unencumbered debt securities issued by sovereigns	1,338,256	191,736
Undrawn credit lines granted by central banks[1]	1,527,299	223,772
Other assets eligible for use as collateral with central banks	-	-
Total liquidity reserves	**5,779,188**	**4,958,893**

[1] The amount is the actual credit line available.

Financial assets available to support future funding

2022	Pledged as collateral		
Amounts in thousands of EUR	**Encumbered**	**Unencumbered**	**Total**
Cash and cash equivalents	-	2,581,140	2,581,140
Loans and advances to banks	144,691	187,802	332,493
Debt securities at amortised cost	-	1,689,780	1,689,780
Loans and advances to customers	-	10,619,676	10,619,676
Investment securities	-	45,718	45,718
Non-financial assets	-	531,673	531,673
Total assets	**144,691**	**15,655,789**	**15,800,480**

2021	Pledged as collateral		
Amounts in thousands of EUR	**Encumbered**	**Unencumbered**	**Total**
Cash and cash equivalents	-	4,277,589	4,277,589
Loans and advances to banks	118,161	147,635	265,796
Debt securities at amortised cost	1,089,745	393,633	1,483,378
Loans and advances to customers	757,482	9,410,316	10,167,798
Investment securities	-	39,976	39,976
Non-financial assets	-	269,648	269,648
Total assets	**1,965,388**	**14,538,797**	**16,504,185**

The decrease in encumbered assets is caused by the repayment of TLTRO III which resulted in releasing debt securities which were held as collateral. In addition, Triodos Bank has an obligation to maintain a reserve with local central banks. As at 31 December 2022, the minimum mandatory reserve deposits with various central banks amount to EUR 124.3 thousand (2021: EUR 115.9 thousand).

Market risk

Market risk management

Market risk is the risk of losses in on- and off-balance positions arising from movements in market prices. For Triodos Bank, this means changes in interest rates and FX rates in particular. Interest rate risk is present in the banking book. Triodos Bank defines IRRBB as the risk that changes in prevailing interest rates will adversely affect the market value of assets versus that of liabilities and/or income versus expenses.

FX risk is the current or prospective risk to earnings and capital that arises from adverse movements in FX rates. Triodos Bank's base currency is the euro. The base currency of the UK subsidiary of Triodos Bank is British pounds.

The FX position is monitored at least monthly and discussed in the Asset and Liability Committee. Limits are agreed by the Asset and Liability Committee.

Market risk structure and organisation

Triodos Bank has exposure to credit risk resulting from outstanding FX contracts (spot, forward and swap transactions) with financial institutions and with funds managed by Triodos Investment Management. Triodos Bank services these funds by providing hedges for the FX risk of these funds' investments.

Triodos Bank has limited exposure to credit risk resulting from outstanding IRS. The IRS are all centrally cleared with the LCH Clearnet. The daily margining minimises the (potential) credit risks.

A limit is set per counterparty based on the expected amount of outstanding FX transactions and the corresponding expected exposure. This limit is subject to the overall counterparty limit Triodos Bank has per counterparty.

Market risk measurement systems

Any collateral needed for FX transactions is calculated and managed daily. In the liquidity stress tests, the amount of collateral needed for FX transactions is stressed in order to calculate the potential impact on Triodos Bank's liquidity position.

Interest rate risk in the banking book

Interest rate risk in the banking book (IRRBB) is inherent in regular customer-related banking activities, due to the fact that short-term funding is invested in long-term loans. Triodos Bank uses mainly retail funding to finance clients and projects which aim to improve society and the environment. In addition, the bank has issued a green subordinated Tier 2 bond in 2021 to diversify its capital and funding base.

Triodos Bank identifies the following three main sources of IRRBB:
• Gap risk: the risk of adverse consequences due to differences in timing of the impact of interest rate changes on the value and interest of assets and liabilities, covering changes to the term structure of interest rates occurring consistently across the yield curve (parallel risk) or differentially by tenor (non-parallel risk).
• Basis risk: the risk of adverse consequences from changes in the difference between two or more rates for different financial instruments with the same interest maturity but with different benchmark rates on which the pricing is based.
• Option risk: the risk that changes in market interest rates prompt changes in the value or maturity of financial instruments, due to explicit or implicit optionality embedded in the bank's products.

Interest rate risk is managed in a four-stage risk control cycle. In this cycle, first the relevant definitions, indicators, measurement methods and analysis for IRRBB are set. Next, the limits for the main IRRBB indicators are specified in the risk appetite statement. The third stage defines the roles and responsibilities for IRRBB management, model governance and escalation procedures and exceptions. Lastly, the risks are monitored, reported and mitigated if necessary.

The local balance sheet development in the individual banking business units is an important driver for how the interest rate risk position develops. Each banking business unit sets up a budget for the next three years and updates it on a quarterly basis with a forecast. The budgets are consolidated and compliance with the risk appetite is checked. Hedging is applied to keep the risk position within the risk appetite and regulatory limits. Adherence to the budget means that asset and liability management is predictable and therefore the fulfilment of the budget is closely monitored.

Interest rate risk management and mitigation strategies

Triodos Bank manages its interest rate risk position in three ways.
• Firstly, Triodos Bank is able to steer the volume and interest rate terms of new assets and the interest rate of its liabilities to a limited extent to maintain the interest rate risk exposure within limits. However, changes in client rates and terms will not be made to the extent that they would materially impair Triodos Bank's customer service, market position, profitability, capital adequacy and reasonable customer expectations.
• Secondly, the amount and duration of the marketable investments in the liquidity buffer can be adjusted.
• Finally, Triodos Bank uses interest rate swaps (IRS) to maintain the bank's IRRBB exposure within the limits if the first two methods are not effective enough. The consequent positions are taken into account in all the IRRBB calculations, subject to hedge accounting, to avoid profit or loss volatility.

Monitoring and decision-making related to the management of the IRRBB is delegated to the Asset and Liability Committee (ALCo). Additionally, the Model and Assumptions Review Committee (MARC) approves material changes to IRRBB models and changes to important model assumptions. Finally, the ALCo decides on approval of and monitors adherence to the Group-wide pricing framework for retail and business banking products.

One of Triodos Bank's strategic risks is a renewed period of low interest rates. Although interest rates have increased significantly during 2022, there is a possibility that central banks will have to decrease policy rates in the coming years, with a negative impact on Triodos Bank's interest margin.

Main measures

Triodos Bank uses various indicators to measure interest rate risk. The interest rate risk position is monitored by the ALCo on a monthly basis and reported quarterly to the Executive Board. The main IRRBB indicators used are earnings at risk (also referred to as net interest income (NII) at risk), economic value of equity at risk, modified duration of equity and gap analysis. Below follows a brief description:
• Net interest income at risk: a short-term indicator which shows the effect of an interest rate shock on Triodos Bank's net interest income over a one-year and two-year horizon.
• Economic value of equity at risk: a long-term indicator which represents the change of the economic value of equity (EVE) in the event of an interest rate shock. EVE is defined as the net present value of the future cash flows of all assets netted with the net present value of the future cash flows of liabilities.
• Supervisory outlier test: this is the economic value of equity at risk relative to either CET1 or actual own funds for several interest rate shocks, as specified in the EBA Guidelines on IRRBB.
• Modified duration of equity: an indicator that expresses the sensitivity of the EVE in the event of parallel interest rate changes.
• Gap analysis: this provides a quick and intuitive sense of how Triodos Bank is positioned by comparing the values of the assets and liabilities that roll over – or reprice – at various time periods in the future. While a gap analysis is a good measure of repricing risk, it is not able to measure interest rate risk stemming from option risk and basis risk. Therefore, Triodos Bank monitors the sensitivity of economic value of the banking book items to interest rate changes for different parts of the yield curve by calculation of key rate durations.
• Option risk arises from caps and/or floors on floating interest rates and as a result of client and bank behaviour, i.e. due to prepayments on loans and mortgages, withdrawal of funds entrusted, and the discretion to change the interest rate on savings and current accounts. Both embedded options and behavioural characteristics are considered in the IRRBB measures.

Due to the continued growth of the mortgage portfolio, Triodos Bank continues to work on improving the data and modelling of off-balance commitments. Fixed-rate commitments in particular (often present in new mortgages to be paid out) add to the interest rate position of the Bank.

Triodos Bank runs a variety of interest rate scenarios to assess its level of interest rate risk. The scenarios are expressed as shocks to the market rate curve. These shocks can vary from parallel shocks to non-parallel shocks, downward to upward shocks, and instant to gradual shocks. Part of the shocks are prescribed by regulatory guidelines whereas other shocks are developed internally. The interest rate scenarios are regularly reviewed and approved in the ALCo.

Modelling and parametric assumptions

The model used for calculating IRRBB measures complies with the EBA guidelines. The balance sheet in Triodos Bank's model develops according to the budget/forecasts for earnings calculations and uses a run-off profile for the EVE calculations. In modelling of IRRBB, client behaviour is complex as it depends on many factors and, as a result, IRRBB models in general build on many assumptions. A brief description of relevant assumptions used in Triodos Bank's IRRBB modelling follows.

First, behavioural models are used to assess the interest rate risk in savings and current accounts. The interest rate risk stemming from these products is difficult to quantify since these accounts typically have variable interest rates and no fixed maturity. The objective of the models is to forecast the future outflow of the non-maturing deposits and their sensitivities to market conditions based on historical data, taking into consideration the statistical significance of that data. The model combines the relationship between client interest rates and market interest rates and outflow predictions.

Secondly, prepayments on loans and mortgages affect interest rate risk on the asset side of the balance sheet and depend on customer behaviour as well. Due to the change in interest rate environment and the maturity of the portfolio, prepayments decreased during the last year. Therefore, behavioural assumptions are present in the risk model and the level of prepayments is included in the measurement of IRRBB. Currently, a constant prepayment rate is used, consistent with the forecast made by the banking business units. Triodos Bank uses sensitivity analyses to measure the correlation between interest rate levels and prepayment behaviour.

Thirdly, some of Triodos Bank's loans and mortgages contain caps and floors to prevent interest rates increasing or decreasing below a certain level. This affects the level of IRRBB in these products and both are taken into account in the economic value and earnings analysis. The economic value of the pipeline, which contains loans with a set interest rate which are committed but not yet remitted, is also considered.

The EVE measures, duration of equity and outlier criterion measures are determined using risk-free discounting and commercial margins. Other spread components are excluded from the cash flow calculations.

Interest rate risk is hedged through the purchase of interest rate swaps. On a monthly basis, an assessment is made of the need to hedge, based on the current interest rate risk position, the forecasted position and market circumstances.

Triodos Bank applies macro hedge accounting to its interest rate hedges to resolve the accounting asymmetry between the portfolio of hedged items (loans and mortgages), measured at amortised cost, and the interest rate derivatives, measured at fair value through the profit or loss statement. As a consequence, hedge ineffectiveness is automatically reflected in the profit or loss.

Explanation of the significance of the IRRBB measures and significant variations

Economic value of equity at risk (EVE at risk) slightly increased in 2022. The increasing market rates caused a large shift in expected repricing of savings rates, lowering the duration of the savings accounts and increasing the economic value at risk. The growing mortgage portfolio also caused an increase. These effects were partly offset by hedging with interest derivatives. All in all, EVE at risk, as measured under a parallel-up scenario, increased from 7.7% to 9.2%.

Net interest income increased in 2022 due to the rising rate environment. This also led to higher net interest income at risk as the higher income could be lost when rates decrease. The change in net interest income at risk under the parallel-down scenario increased from 1.2% to 10.6%.

Changes in net interest income are measured with the following assumptions:
- The upward and downward scenarios reflect a parallel shock of 200 basis points for EUR and 250 basis points for GBP curves.
- Both shocks are applied gradually over a period of 12 months.
- The magnitude of the downward scenario is updated frequently and based on the latest interest rate outlook.
- In both scenarios no floors are applied to the market interest rates.

- The net interest income sensitivity is measured over a period of 12 months.
- Projected future volumes of the different balance sheet items are used in the calculations.

The average repricing maturity assigned to non-maturity deposits is 2.1 years, and the longest assigned repricing maturity assigned is equal to 7 years.

Below follows a short summary of the main developments in the main interest rate risk indicators.

Net interest income at risk
Net interest income at risk is measured with a one- and two-year horizon. One-year net interest income at risk increased from 1.2% to 10.6% in 2022, and two-year net interest income at risk increased from 4.4% to 18.2%. Both indicators show their worst-case outcome in a scenario where interest rates are shocked parallel downwards.

Supervisory outlier test
In 2022, the supervisory outlier test increased from 8.7% to 10.8%. The increase is mainly caused by a shorter duration of the savings accounts and the growing mortgage portfolio, these effects are partly offset by additional hedging using interest rate derivatives. The supervisory outlier test worst-case outcome is measured in the parallel-up scenario where rates increase 200 basis points for the EUR and 250 basis points for GBP.

EVE at risk
EVE at risk increased from 7.7% to 9.2% in 2022. As with the supervisory outlier test, the parallel-up scenario is the worst-case scenario for EVE at risk.

Duration of equity
Duration of equity increased from 3.2 to 5.0 years over the course of 2022. The developments resembled those of EVE at risk since the underlying drivers are similar to those for the supervisory outlier test and EVE at risk, although one difference is that duration of equity is calculated under the assumption of a 100 basis point parallel shift in interest rates.

Quantitative market risk disclosures

Interest rate risk in the banking book

The following table shows the interest rate risk within Triodos Bank:

2022 Amounts in thousands of EUR	Floating-rate	<= 3 months	<= 1 year	<= 5 years	> 5 years	Total
Interest-bearing assets						
Cash	2,580,062	-	-	-	-	2,580,062
Banks	315,497	1,355	-	15,447	-	332,299
Loans	1,155,515	588,138	1,521,685	3,115,842	4,555,452	10,936,632
Hedged loans	20,000	629,400	727,400	-81,800	-1,295,000	-
Interest-bearing securities	-	149,004	265,344	1,121,756	137,309	1,673,413
Total	**4,071,074**	**1,367,897**	**2,514,429**	**4,171,245**	**3,397,761**	**15,522,406**
Interest-bearing liabilities						
Banks	285,077	989	3,682	33,168	14,156	337,072
Subordinated loans	-	98	295	254,375	-	254,768
Funds entrusted	25,140	1,664,787	1,934,151	7,056,395	3,127,545	13,808,018
Total	**310,217**	**1,665,874**	**1,938,128**	**7,343,938**	**3,141,701**	**14,399,858**

2021 Amounts in thousands of EUR	Floating-rate	<= 3 months	<= 1 year	<= 5 years	> 5 years	Total
Interest-bearing assets						
Cash	4,277,972	-	-	-	-	4,277,972
Banks	145,276	1,427	-	119,161	-	265,864
Loans	1,194,547	842,981	1,679,114	3,290,098	3,181,410	10,188,150
Hedged loans	12,500	600,200	362,900	-113,400	-862,200	-
Interest-bearing securities	-	98,104	391,805	828,236	124,218	1,442,363
Total	**5,630,295**	**1,542,712**	**2,433,819**	**4,124,095**	**2,443,428**	**16,174,349**
Interest-bearing liabilities						
Banks	1,551,364	4,143	6,896	20,470	41,047	1,623,920
Subordinated loans	-	-	-	6,822	247,876	254,698
Funds entrusted	9,555	1,611,065	2,079,901	6,741,792	2,852,440	13,294,753
Total	**1,560,919**	**1,615,208**	**2,086,797**	**6,769,084**	**3,141,363**	**15,173,371**

Only interest-bearing assets and liabilities are reported in this table, which results in differences with the balance sheet figures. No allowance for expected credit losses, net modification of amortised cost or interest amounts is shown. Interest-bearing securities are valued at redemption value including bond premium and after deduction of discounts. For funds entrusted without a fixed-interest-rate term, the outcome of the quantitative savings and current account model, as mentioned before, is used. All other interest-bearing assets and liabilities are reported as floating rates or are broken down in the maturity calendar by their remaining contractual interest rate term.

Foreign exchange risk

Triodos Bank aims to avoid net currency positions, with the possible exception of those arising from strategic investments. The currency risk of the UK subsidiary equity participation was hedged during 2022. The position also contains the currency derivatives of Triodos Investment Funds which are nearly fully hedged.

There is a trade-off between FX-risk-hedging and capital-ratio-hedging. If the FX risk of the participation is hedged, the effect will be that the capital ratio will change as result of FX rate changes. And if the FX risk is not hedged, the effect will be that the value of our capital will change, however the capital ratio will remain stable.

The following table shows Triodos Bank's foreign currency position in thousands of EUR as at 31 December.

2022 Amounts in thousands of EUR	Cash position Debit	Cash position Credit	Term position Debit	Term position Credit	Net position Debit	Net position Credit
GBP	2,091,298	1,866,187	-	222,116	2,995	-
USD	17,533	718	5,605	5,605	16,815	-
NOK	95	-	-	-	95	-
AUD	1	-	-	-	1	-
SEK	49	-	-	-	49	-
INR	-	-	1,418	1,418	-	-
Total	**2,108,976**	**1,866,905**	**7,023**	**229,139**	**19,955**	**-**

Net open foreign currency position (total of net positions debit and credit): EUR 20.0 million.

2021 Amounts in thousands of EUR	Cash position Debit	Cash position Credit	Term position Debit	Term position Credit	Net position Debit	Net position Credit
GBP	2,143,735	1,918,230	-	221,436	4,069	-
USD	17,671	382	5,277	5,277	17,289	-
NOK	100	-	-	-	100	-
AUD	1	-	-	-	1	-
SEK	52	-	-	-	52	-
INR	-	-	4,453	4,453	-	-
Total	**2,161,559**	**1,918,612**	**9,730**	**231,166**	**21,511**	**-**

Net open foreign currency position (total of net positions debit and credit): EUR 21.5 million.

Capital management

Regulation and capital requirements

The banking industry is highly regulated. Regulations play an important role in society to ensure banks operate safely. Triodos Bank pays constant attention to comply with all regulation.

Basel III is a worldwide standard for regulation, supervision and risk management of the banking sector, developed by the Basel Committee on Banking Supervision. Basel III has been transposed by the European Union into the Capital Requirements Regulation and the Capital Requirements Directive. The Capital Requirements Regulation is directly applicable and the Capital Requirements Directive was transposed into local law by each of the members of the European Union. As Triodos Bank is formally domiciled in the Netherlands, the Dutch implementation of the Capital Requirements Directive is applicable.

There is no difference in the scope of consolidation for accounting and for prudential reporting purposes. Except for transfer of own funds of Triodos Bank UK Ltd, there is not any current or foreseen material practical or legal impediment to the prompt transfer of own funds or repayment of liabilities among Triodos Bank and its consolidated companies. All subsidiaries are included in the consolidation. Triodos Bank has not made use of a derogation option with regard to the application of prudential requirements on an individual basis.

Capital requirements

Triodos Bank calculates its internal capital adequacy requirements based on minimum requirements (Pillar 1) and supplemented with additional capital charges (Pillar 2), as described in the Capital Requirements Regulation.

The total capital ratio decreased by 0.3% from 21.3% at year-end 2021 to 21.0% at year-end 2022. This ratio is well above the regulatory minimum requirement. In October 2021, Triodos Bank issued a green subordinated Tier 2 bond in the amount of EUR 250 million to further strengthen and diversify its capital base. This green bond qualifies as Tier 2 capital in line with prudential regulations.

Minimum capital requirements (Pillar 1)

The total minimum regulatory requirement consists of capital charges for credit risk, operational risk and market risk:

- Credit risk – Triodos Bank applies the standardised approach for calculating its minimum capital requirements for credit risk and the financial collateral simple method for credit risk mitigation. The risk-weighted asset calculations apply to all on-balance sheet exposures (including the loan book and the investment book), and off-balance sheet items (such as loan offers not yet accepted) and derivatives exposures.
- Operational risk – Based on the size and limited complexity of the Triodos Bank organisation, the basic indicator approach (BIA) is used for calculating the capital requirement for operational risk, which equals 15% of the average over three years of Triodos Bank's gross income.
- Market risk – The capital charge for Triodos Bank's market risk is related to its exposure to FX risk. The requirement is calculated as the sum of the bank's overall net FX position, multiplied by 8%. Triodos Bank only accepts limited net FX positions in strategic investments and in its UK activities in GBP. However, when the regulatory threshold of 2% of the actual own funds is not exceeded, the capital charge for market risk is zero.

• Credit valuation adjustment risk – A capital charge is applied for the counterparty risk of derivative transactions that are not cleared through a qualified central counterparty. Triodos Bank applies the standardised method for calculating the capital requirements.

Additional capital requirements

In order to determine its economic capital, Triodos Bank also calculates additional capital requirements. These consist of charges for risks or parts of risks that are not covered by Pillar 1. This consists of items in the areas of credit risk, strategic risk, interest rate risk in the banking book (IRRBB), model risk and operational risk. The total capital requirement consists of the Pillar 1 and 2 requirements and these combined buffer requirements.

Internal capital

The capital strategy of Triodos Bank is assessed in its Internal Capital Adequacy Assessment Process (ICAAP). The ICAAP covers, for example, the measurement of risks requiring an adequate capital buffer, stress testing, capital contingency and the allocation of available capital to the different Triodos Bank business units. The ICAAP is subject to the Supervisory Review and Evaluation Process (SREP) of DNB, which is conducted on a yearly basis.

The actual capital position is stressed regularly based on a number of stress scenarios. A capital contingency process is set up for Triodos Bank in case of a (potential) shortfall in available capital, which can be a threat to its solvency. For this purpose, the Recovery Plan contains measures for restoring the bank's solvency by reducing risks and/or increasing capital and provides a specific governance structure for managing such stressed situations.

Capital strategy

Triodos Bank aims for a sound and resilient capital base supporting our sustainable and targeted lending growth strategy.

The objective of Triodos Bank's capital strategy is to ensure its viability by:
• maintaining sufficient capital to absorb current and future business losses, also in extreme situations (stress);
• allocating sufficient capital to its business units; and
• ensuring compliance with all applicable capital legislation and regulation at all times.

Triodos Bank's own funds consists of Common Equity Tier 1 (CET1) capital and Tier 2 capital.

In 2021, Triodos Bank has issued the green subordinated Tier 2 bond for an amount of eur 250 million, which matures in 2032 with the option of Triodos Bank to repay early, starting in 2027. This might result in a refinancing risk, the possibility that Triodos Bank is not able or only at high costs to attract investors to invest in a newly issued Tier 2 bond that replaces the (early) matured one.

Capital allocation and monitoring

Equity is allocated to banking business units in the yearly budget and planning process based on the forecasted return on risk-weighted assets, contribution to our mission and dynamic sector strategy. Triodos Bank works with a rolling three-year capital forecast.

The Asset and Liability Committee monitors Triodos Bank’s capital position and advises the Executive Board on capital adequacy. The Asset and Liability Committee also assesses whether available capital is sufficient to support current and future bank activities on a monthly basis.

During 2022, available capital has been at sufficient levels at all times, in line with external regulatory minimum requirements. A retained portion of the 2022 profit will be added to reserves in 2023.

Leverage ratio and management of excessive leverage

The leverage ratio is a measure indicating the level of the Tier 1 capital compared to the total exposure. Its aim is to assess the risk of excessive leverage of the institution.

The risk of excessive leverage is managed inclusively in Triodos Bank’s Capital Management strategy and procedures. Triodos Bank aims for a sound capital base by avoiding high leverage risks.

Triodos Bank's risk appetite level related to the leverage ratio is set at 5%, which is significantly above regulatory requirements. At year-end, the relevant capital used to calculate the leverage ratio consists only of CET1 capital. Triodos Bank’s capital base to calculate the leverage ratio is therefore not subject to refinancing risks. The leverage ratio is part of Triodos Bank’s three-year budget. Compliance with Triodos Bank’s risk appetite level is part of the budget requirements.

In 2022, Triodos Bank repaid the participations in the TLTRO tender III.5 and tender III.7. This has a positive impact on the leverage ratio. However, compared to 2021 year-end figures, the repayment does not result in an improvement of the leverage ratio as at that time ECB regulation was in place that allowed banks to leave out amounts placed with central banks from the leverage ratio calculation.

Fair value of financial instruments

Valuation models

Triodos Bank measures fair values using the following fair-value hierarchy, which reflects the significance of the inputs used in making the measurements.

- Level 1: Inputs that are quoted market prices (unadjusted) in active markets for identical instruments.
- Level 2: Inputs other than quoted prices included within Level 1 that are observable either directly (i.e. as prices) or indirectly (i.e. derived from prices). This category includes instruments valued using quoted market prices in active markets for similar instruments, quoted prices for identical or similar instruments in markets that are considered less than active, or other valuation techniques in which all significant inputs are, directly or indirectly, observable from market data.
- Level 3: Inputs that are unobservable. This category includes all instruments for which the valuation technique includes inputs that are not observable and the unobservable inputs have a significant effect on the instrument's valuation. This category includes instruments that are valued based on quoted prices for similar instruments for which significant unobservable adjustments or assumptions are required to reflect differences between the instruments.

Triodos bank determines the fair value of its financial instruments using the following bases. The fair value of listed debt securities at amortised cost is the market value. The fair value of unlisted debt securities at amortised cost is public quoted information if available or nominal value. The fair value of loans and advances to banks, lease liabilities, deposits from banks, deposits from customers and debt issued and other borrowed funds has been determined by calculating the net present value of expected interest and redemption cash flows, based on market interest rates as at the end of the year. The fair value of loans and advances to customers (including mortgages) has been determined by calculating the net present value of the interest and redemption cash flows, with account taken of expected prepayment behaviour. The net present value is calculated by using market data, i.e. zero coupon rates, as at the end of the year, which are adjusted with a Triodos Bank-specific spread. The spread is based on the expected margin the business units expect to make over the market base rates in the coming years on their production of business loans and mortgages. Part of the corporate loans and mortgages includes caps and/or floors on interest rates. The fair value of other assets and liabilities is assumed to be equal to the balance sheet value.

Investment securities comprise participating interests and debt where no significant influence can be exercised and are carried at fair value through either comprehensive income or profit or loss. In the case of an investment security that is listed on an active stock exchange, the fair value will be deemed to be equal to the most recently published stock exchange price. In the case of an investment security not listed on an active stock exchange or where there is no regular price quotation, the fair value will be determined to the best of our ability using all available data, including an annual report audited by an external independent auditor, interim financial information from the institution and any other relevant data provided to Triodos Bank.

Derivatives held for risk management are carried at fair value through profit or loss. These instruments are split between interest rate swaps and foreign exchange rate forward contracts. The interest rate swaps are valued using the appropriate discount curve to calculate the net present value of expected cash flows under the contracts. This curve is openly observable from market data. The foreign exchange rate forward contracts are valued using the forward exchange rate for the corresponding currency, as observable from market data.

Financial instruments measured at fair value – fair-value hierarchy

The following table analyses financial instruments measured at fair value at the reporting date, by the level in the fair-value hierarchy into which the fair-value measurement is categorised. There have been no transfers of financial instruments between different levels during the reporting period.

2022 Amounts in thousands of EUR	Level 1	Level 2	Level 3	Total
Derivative assets held for risk management				
Interest rate	-	290,310	-	290,310
Foreign exchange	-	5,386	-	5,386
Total	**-**	**295,696**	**-**	**295,696**
Investment securities				
Equities	17,073	13,866	5,153	36,092
Debt	-	190	-	190
Total	**17,073**	**14,056**	**5,153**	**36,282**
Derivative liabilities held for risk management				
Interest rate	-	-	-	-
Foreign exchange	-	1,249	-	1,249
Total	**-**	**1,249**	**-**	**1,249**

2021 Amounts in thousands of EUR	Level 1	Level 2	Level 3	Total
Derivative assets held for risk management				
Interest rate	-	17,983	-	17,983
Foreign exchange	-	1,667	-	1,667
Total	**-**	**19,650**	**-**	**19,650**
Investment securities				
Equities	11,739	13,784	4,705	30,228
Debt	-	5,463	-	5,463
Total	**11,739**	**19,247**	**4,705**	**35,691**
Derivative liabilities held for risk management				
Interest rate	-	2,757	-	2,757
Foreign exchange	-	4,190	-	4,190
Total	**-**	**6,947**	**-**	**6,947**

Level 3 valuations relate to participating interest which are valued at fair-value through other comprehensive income. Total fair value changes amount to EUR 431.0 (2021: EUR 135.0).

Financial instruments not measured at fair value

The following table sets out the dirty fair values of financial instruments not measured at fair value and analyses them by the level in the fair-value hierarchy into which each fair-value measurement is categorised. The dirty fair value includes the current interest accrual.

2022 Amounts in thousands of EUR	Level 1	Level 2	Level 3	Total fair values	Total Carrying
Assets					
Debt securities at amortised cost	1,487,611	108,395	-	1,596,006	1,689,780
Loans and advances to banks	-	-	332,012	332,012	332,493
Loans and advances to customers	-	-	9,890,824	9,890,824	10,619,676
Investment securities	9,436	-	-	9,436	9,436
Liabilities					
Deposits from banks	-	-	332,740	332,740	337,087
Deposits from customers	-	-	12,832,274	12,832,274	13,816,340
Subordinated debt	-	-	202,927	202,927	259,884
Lease liabilities	-	-	12,566	12,566	13,924

2021 Amounts in thousands of EUR	Level 1	Level 2	Level 3	Total fair values	Total Carrying
Assets					
Debt securities at amortised cost	1,407,965	85,174	-	1,493,139	1,483,378
Loans and advances to banks	-	-	266,300	266,300	265,796
Loans and advances to customers	-	-	10,357,966	10,357,966	10,167,798
Investment securities	4,285	-	-	4,285	4,285
Liabilities					
Deposits from banks	-	-	1,605,889	1,605,889	1,608,306
Deposits from customers	-	-	13,276,234	13,276,234	13,285,072
Subordinated debt	-	-	255,233	255,233	255,615
Lease liabilities	-	-	19,730	19,730	17,425

Fair-value of the cash and cash equivalents approximates the total carrying amount as these are on demand balances and therefore not included in the above table.

Classification of financial assets and financial liabilities

The following table provides a reconciliation between line items in the statement of financial position and categories of financial instruments. Financial instruments are either measured at fair value through profit or loss (FVTPL), fair value through other comprehensive income (FVOCI) or at amortised cost.

2022 Amounts in thousands of EUR	Mandatorily at FVTPL	Designated as at FVTPL	FVOCI – equity instruments	Amortised cost[1]	Total carrying amount
Cash and cash equivalents	-	-	-	2,581,140	2,581,140
Debt securities at amortised cost	-	-	-	1,689,780	1,689,780
Loans and advances to customers	-	-	-	10,619,676	10,619,676
Loans and advances to banks	-	-	-	332,493	332,493
Investment securities	190	-	36,092	9,436	45,718
Other assets	-	-	-	235,977	235,977
Derivative assets held for risk management	295,696	-	-	-	295,696
Total financial assets	**295,886**	**-**	**36,092**	**15,468,502**	**15,800,480**
Derivative liabilities held for risk management	1,249	-	-	-	1,249
Deposits from banks	-	-	-	337,087	337,087
Deposits from customers	-	-	-	13,816,340	13,816,340
Lease liabilities	-	-	-	13,924	13,924
Subordinated debt	-	-	-	259,884	259,884
Other liabilities	-	-	-	112,601	112,601
Total financial liabilities	**1,249**	**-**	**-**	**14,539,836**	**14,541,085**

[1] The amortised cost column also includes other valuation principles to create the reconciliation with the balance sheet (e.g. equity method, historical cost). See the accounting principles for all valuation principles applied.

2021 Amounts in thousands of EUR	Mandatorily at FVTPL	Designated as at FVTPL	FVOCI – equity instruments	Amortised cost[1]	Total carrying amount
Cash and cash equivalents	-	-	-	4,277,589	4,277,589
Debt securities at amortised cost	-	-	-	1,483,378	1,483,378
Loans and advances to customers	-	-	-	10,167,798	10,167,798
Loans and advances to banks	-	-	-	265,796	265,796
Investment securities	5,463	-	30,228	4,285	39,976
Other assets	-	-	-	249,998	249,998
Derivative assets held for risk management	19,650	-	-	-	19,650
Total financial assets	**25,113**	**-**	**30,228**	**16,448,844**	**16,504,185**
Derivative liabilities held for risk management	6,947	-	-	-	6,947
Deposits from banks	-	-	-	1,608,306	1,608,306
Deposits from customers	-	-	-	13,285,072	13,285,072
Lease liabilities	-	-	-	17,425	17,425
Subordinated debt	-	-	-	255,615	255,615
Other liabilities	-	-	-	80,698	80,698
Total financial liabilities	**6,947**	**-**	**-**	**15,247,116**	**15,254,063**

[1] The amortised cost column also includes other valuation principles to create the reconciliation with the balance sheet (e.g. equity method, historical cost). See the accounting principles for all valuation principles applied.

Non-trading derivatives and hedge accounting

Non-trading derivatives

The following table describes the fair values of derivatives held for risk management purposes by type of instrument.

	2022		2021	
Amounts in thousands of EUR	**Assets**	**Liabilities**	**Assets**	**Liabilities**
Instrument type				
Interest rate				
Designated in fair value hedges	290,310	-	17,675	2,757
Other derivatives	-	-	308	-
Total interest rate	**290,310**	**-**	**17,983**	**2,757**
Foreign exchange				
Designated in a net investment hedge	4,126	-	-	2,568
Other derivatives	1,260	1,249	1,667	1,622
Total foreign exchange	**5,386**	**1,249**	**1,667**	**4,190**
Total non-trading derivatives	**295,696**	**1,249**	**19,650**	**6,947**

Fair-value hedges of interest rate risk

Triodos Bank uses interest rate swaps to hedge its exposure to changes in the fair values of fixed-rate euro loans and advances in respect of a benchmark interest rate (mainly EURIBOR). Triodos Bank applies the EU carve-out under IAS 39 and applies macro fair-value hedge accounting. In this hedge relationship, hedged items and hedging instruments are designated on a portfolio basis into fair-value hedge relationships.

Triodos Bank determines hedged items by identifying portfolios of homogeneous loans based on their contractual interest rates, maturity and other risk characteristics. Loans within the identified portfolios are allocated to repricing time buckets based on expected, rather than contractual, repricing dates. The hedging instruments (pay fix/receive floating rate interest rate swaps) are designated appropriately to those repricing time buckets. Hedge effectiveness is measured on a monthly basis, by comparing fair-value movements of the designated proportion of the bucketed loans due to the hedged risk against the fair-value movements of the derivatives.

At the time of designation of the hedge relationship for macro hedge accounting, a prospective test of the hedge relationship is performed to evidence the existence of an economic relationship. Fair value of hedged items and hedging instruments is calculated as at the designation date. In addition, the fair values are recalculated by applying at +/-50bps shift on the EURIBOR zero curve and the OIS zero curve. If the changes in fair value of hedged item and hedging instrument are within 80-125% of each other, the hedge relationship can be expected to be highly effective.

The retrospective test is performed each month-end by calculating the fair value of the hedged items and hedging instruments at that date. The hedge relationship is considered to be highly effective if the deltas in fair value between hedging instrument and hedged item as per designation date and as per period end-date are in the 80-125% bandwidth, the so-called dollar-offset method.

When the outcome of the effectiveness test is outside the bandwidth, the hedge relationship for the tested month is discontinued. This means that the fair-value changes of the hedging instruments continue to be recorded through profit or loss, but no offsetting fair-value adjustment is recognised on the hedged items. At de-designation, the fair-value hedge accounting adjustments are amortised on a straight-line basis over the original hedged life.

Triodos Bank discloses its risk management related to interest rate risk in Market risk management on page 294.

Hedge relationships designated under this policy are expected to be highly effective. However, some degree of ineffectiveness is expected due to:
- Discounting of assets with the curve of the payment frequency where the swaps are discounted using the OIS curve; and
- Fair value changes in the floating leg of the swaps.

2022		**Carrying amount**			
Hedging instruments Amounts in thousands of EUR	**Nominal amount**	**Assets**	**Liabilities**	**Change in fair value**	**Ineffective-ness**
Interest rate swaps – portfolio hedge accounting	1,415,600	290,310	-	276,498	1,325

2022	**Nominal amount**	**Fair value hedge adjustments**		
Hedged item Amounts in thousands of EUR	**Assets**	**Debit adjustment**	**Credit adjustment**	**Change in fair value**
Loans and advances to customers	1,415,600	-	289,691	-275,173

2021		**Carrying amount**			
Hedging instruments Amounts in thousands of EUR	**Nominal amount**	**Assets**	**Liabilities**	**Change in fair value**	**Ineffective-ness**
Interest rate swaps – portfolio hedge accounting	1,042,400	17,675	2,757	20,525	34

2021	Nominal amount	Fair value hedge adjustments		
Hedged item **Amounts in thousands of EUR**	**Assets**	**Debit adjustment**	**Credit adjustment**	**Change in fair value**
Loans and advances to customers	1,042,400	-	14,709	-20,491

The significant increase of the market interest rates has resulted in a sharp increase of the fair values of the interest rate swaps that has offset the decrease in fair value of the fixed rate loans. Due to the large fair-value movements, marginal ineffectiveness has resulted in ineffectiveness recorded in the profit or loss accounts of EUR 1.3 million.

Net investment hedge

Triodos Bank enters into GBP foreign currency forward contracts to hedge the currency risk of the UK subsidiary equity participation of Triodos Bank. Triodos Bank hedges up to a maximum of 100% of the UK subsidiary to maintain effectiveness. The GBP foreign currency contracts are designated in net investment hedge relationship to hedge the net asset value of the UK subsidiary.

Triodos Bank discloses its risk management related to foreign exchange risk in Market risk management on page 294.

Triodos Bank ensures that the foreign currency in which the hedging instrument is denominated is the same as the functional currency of the net investment. This qualitative assessment is supplemented quantitatively using the hypothetical derivative method for the purposes of assessing hedge effectiveness. Triodos Bank assesses effectiveness by comparing past changes in the fair value of the derivative with changes in the fair value of a hypothetical derivative. The hypothetical derivative is constructed to have the same critical terms as the net investment designated as the hedged item and a fair value of zero at inception. The net investment is held for a period longer than the maturity of the forward foreign exchange contracts, Triodos Bank hedges the net investment only to the extent of the nominal amount of the foreign exchange leg of the derivative.

2022		Carrying amount			
Hedging instruments **Amounts in thousands of EUR**	**Nominal amount**	**Assets**	**Liabilities**	**Change in fair value**	**Ineffective-ness**
Foreign currency forward contracts (EUR:GBP)	196,650	4,126	-	-11,741	-55

2022		Carrying amount			
Hedged item **Amounts in thousands of EUR**	**Nominal amount**	**Assets**	**Liabilities**	**Change in fair value**	**Foreign currency translation reserve**
GBP net investment in UK subsidiary	196,097	221,491	-	11,434	-4,426

2021		Carrying amount			
Hedging instruments **Amounts in thousands of EUR**	**Nominal amount**	**Assets**	**Liabilities**	**Change in fair value**	**Ineffective-ness**
Foreign currency forward contracts (EUR:GBP)	186,300	-	2,568	13,120	-

2021		Carrying amount			
Hedged item **Amounts in thousands of EUR**	**Nominal amount**	**Assets**	**Liabilities**	**Change in fair value**	**Foreign currency translation reserve**
GBP net investment in UK subsidiary	186,886	222,140	-	-13,196	-4,364