



BANK OF FINLAND ANNUAL REPORT 2022



Release notes

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Greetings from the Governor

24.3.2023

Russia's illegal and brutal war in Ukraine fundamentally transformed the Bank of Finland's operating environment in 2022: the economic outlook darkened, inflation climbed to an exceptionally high level and consumers' purchasing power declined. On the brighter side, the job market remained strong. The research and analytical work of the Bank and its Institute for Emerging Economies (BOFIT) was in high demand due to the need for evaluations of the economic impact of the crisis.

It is the people of Ukraine who are having to pay the highest price, and the human suffering is immense. Ukraine is fighting for freedom, democracy and European values. It needs our full support.

Europe was faced with a major challenge: how could it cope with the energy crisis sparked by the war. Thanks to joint decisions and national solutions it has proven possible to moderate the impact of the energy crisis. The private sector has also managed to seek out new ways to accelerate the green transition in energy.

In the ECB Governing Council, we began to raise interest rates in July, with the aim of stabilising inflation at 2% over the medium term. Policy rates were raised in 2022 by altogether 2.5 percentage points, bringing the deposit rate to 2% by the end of the year. As a consequence, there was a considerable rise in Euribor rates. A further element in the process of normalising monetary policy was the ending of net purchases under the extensive APP and pandemic-related asset purchase programmes.

By tightening monetary policy, the aim is to avoid the emergence of an upward spiral in consumer prices and wages. Such a wage-price spiral would be a sign that inflation expectations have become de-anchored. If expectations are no longer anchored, then achievement of the inflation target will be at greater cost to the real economy in the longer term, because it would lead to tighter monetary policy and slower growth in the economy.

The threat assessment of cyber and hybrid attacks grew gloomier after Russia began its war in Ukraine. The Bank of Finland and other public authorities together prepared backup systems aimed at protecting the ability to make everyday payments in Finland under all circumstances. We played our part in ensuring that payment systems function and people can trust them. Cash is important for the inclusion of all citizens, which is essential in a payment system malfunction.

A central bank digital currency, or digital euro for the euro area, is seen as a way of preparing for the changes in the operating environment brought by digitalisation. For the purposes of this project, the Bank of Finland established in 2022 a monitoring group, which includes representatives of payment service providers and banks.

* * *

Among the challenges faced by Finland, the public finances is an area that cannot be ignored. In Finland, we have a fairly sound welfare state, but the economy is currently too small to carry it. Fiscal sustainability should not be just one goal among many, but an essential requirement for the long-term development of society.

Besides focusing on debt sustainability, the conditions for sustainable growth should also be nurtured. Population ageing and the weak productivity trend are eroding the longer term growth outlook for the Finnish economy. Investment in education and in research and innovation are also needed, as well as more education-based and work-based immigration.

Climate change and biodiversity loss are no longer challenges for the future alone, as their impact is already visible. The greening of monetary policy took a step forward with the ECB Governing Council's plan, approved in 2021.

The Bank of Finland, as part of the Eurosystem, began to tilt bond purchases towards corporates with a better climate performance.

The Bank of Finland was involved in further developing climate statistics and assessment indicators of climate impacts, for use by central banks. Having reliable data is an effective way of preventing greenwashing.

* * *

Finland is, for the most part, a resilient society, and in difficult times people in Finland work together and in a responsible manner. Finland is well placed to stop its economy from languishing and not only to cope but to thrive.

The Bank of Finland played its part strongly in fostering stability in the economy in 2022.

Last but not least, a sincere thank you to all staff and the Bank's partners for your valuable work during the year, for the benefit of Finland and the whole of Europe.

*Olli Rehn
Governor
Bank of Finland*



Operations and strategy

The Bank of Finland updated its strategic priorities in 2022 in response to the rapidly altered economic and security situation in Finland and Europe.

The Bank of Finland is Finland's monetary authority and national central bank. It is also a member of the euro area's central banking system, the Eurosystem.

The Bank's mission is to foster a sustainable economy and promote stability, and it pursues this with the aid of its strategy and supported by purposeful economic governance and prudent human resources planning.

Rapid changes occurred in the economic and security environment in Finland and Europe during 2022 as a result of Russia's war in Ukraine, the heightened geopolitical tensions and surging inflation. These changes also affected central bank activities. The Bank of Finland responded by updating its strategic priorities.

Bank of Finland reduced its carbon footprint in 2022

For the second year in succession, the Bank of Finland, in 2022, reduced its carbon footprint by following the recommendations of the international Greenhouse Gas (GHG) Protocol. The Bank also further developed its emissions calculations during the year to match more closely its activities and those of the FIN-FSA.

With a more focused calculation method and through specific emissions reduction measures, the Bank succeeded in reducing its carbon footprint in 2022.

The specific emissions reduction measures included updating the Bank's car benefit policy and cutting emissions from energy consumption through, for example, reduced lighting, air conditioning adjustments and replacement of some external glazing with more energy efficient materials.

Data Balance Sheet highlights the importance of data in the work of the Bank of Finland

The Bank of Finland's 2022 Data Balance Sheet will be published in April 2023 as a separate report augmenting the Annual Report.

The Data Balance Sheet is a key part of the Bank of Finland's information management reporting. Its purpose is to highlight the importance of data, information and knowledge to the work of the central bank, and to describe the operating environment for these at the Bank.

The Data Balance Sheet looks at some fundamentals of information management at the Bank of Finland from different perspectives, as well as topics of current relevance for information management, data security and data protection. It also presents facts and figures concerning central bank functions, information management and analytical work.



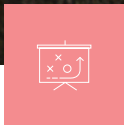
Bank of Finland in a nutshell

The Bank of Finland is Finland's monetary authority and national central bank. At the same time it is a part of the Eurosystem, which is responsible for monetary policy and other central bank functions in the countries of the euro area as well as administering the world's second largest currency, the euro. The main objective of the Eurosystem and the Bank of Finland is price stability.

The Bank of Finland

- prepares and implements monetary policy in Finland
- oversees the stability of the financial system and produces statistics
- conducts research and participates in economic policy debate
- takes care of clearing for interbank payments and manages its own investments
- maintains stable and efficient payment systems and issues banknotes and coins into circulation.

[Read more on the Bank of Finland's functions.](#)



Bank of Finland's newly updated strategic priorities emphasise preparedness

The economic and security outlook for Finland and Europe underwent a rapid transformation during 2022, and it was expected that these changes would be reflected extensively in the Bank of Finland's activities. The Bank therefore updated its strategic priorities.

Russia's war in Ukraine, intensified geopolitical tensions, recovery from the COVID-19 pandemic, and surging inflation all left their mark on 2022.

In response to the changing environment, the Bank of Finland Board, in June, updated the strategic priorities that are used to guide the Bank's activities over the medium term. The Bank of Finland's mission statement, vision and operating principles were found to be still very relevant and were retained without amendment.

Bank of Finland's updated strategic priorities for 2023–2025:

- European Central Bank monetary policy in the new inflation environment
- Preparedness and security of supply
- Future of European payment
- EU-wide review of macroprudential policy
- Contributing to domestic economic policy
- Promoting sustainable economic growth and climate goals in the EU.

ECB monetary policy in the new inflation environment

The post-pandemic economic recovery and Russia's war in Ukraine together contributed to a surge in inflation. [The ECB then tightened its monetary policy in stages during 2022.](#)

As a member of the Eurosystem, the Bank of Finland has a strong focus on monetary policy research and analysis and on the development of policy tools. This is particularly important in an environment in which there is great uncertainty about the course the economy will take and about the dynamics of inflation.

The Bank of Finland also does its best to make sure that the ECB's monetary policy decisions are explained to the general public in a way that can be readily understood.

Preparedness and security of supply

The security environment in Europe changed considerably in 2022. As the country's monetary authority, the Bank of Finland has a responsibility regarding the national security of supply.

The Bank is further developing the resilience of Finland's payment and financial systems in cooperation with other public authorities and the financial sector.

In this altered environment, the importance of the Bank's own preparedness is also emphasised. The aspects given special attention by the Bank during the year include its preparedness for cyber and hybrid threats.

Future of European payment

The pandemic brought added impetus to the spread of digital payments. The Bank of Finland work to promote the development of safe and effective payment systems includes its support for the introduction of a European payments strategy in the Finnish market.

Currently under way in the Eurosystem are a number of significant development projects concerning financial markets infrastructure.

The Bank of Finland is continuing its active input to the Eurosystem's joint project examining the possibility of a digital euro. Such a digital euro could complement the range of payment instruments in the future.

EU-wide review of macroprudential policy

Slower growth in the economy and the rise in interest rates are heightening concerns over the debt sustainability of households, businesses and governments.

An upsurge in debt problems could weaken the resilience of credit institutions. Pressure is also mounting to expand macroprudential policy beyond the banking sector as financial intermediation becomes more diverse.

The aim of revising the framework, tools and analytical methods of macroprudential policy is to ensure that the authorities are able to safeguard financial stability through timely, targeted and appropriately scaled policy measures.

Contributing to domestic economic policy

The Bank of Finland's tasks include furthering sustainable growth in the Finnish economy and in the wider EU economy without compromising price stability.

The Bank participates in the national debate on economic policy in the role of impartial expert. Its views are based on research, high-quality analysis and reliable data.

In its analytical work, the Bank focuses especially on the Finnish economy's structural challenges. Important factors for sustainable economic growth include debt sustainability, employment, productivity and innovation.

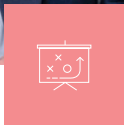
Promoting sustainable economic growth and climate goals in the EU

Growth in Finland's economy is closely linked to the EU's economic performance and the Eurosystem economy.

The operation of the single market, the trend in productivity and level of sustainable growth are all affected by the structures and regulations of the EU's economic governance framework. These also have an impact on the implementation of monetary and macroprudential policy.

Climate change is a global challenge and also represents a key challenge for central banks, and one that requires solutions determined within international forums.

The Bank of Finland is contributing to the development work on the EU's economic governance framework as well as to the efforts to combat climate change and the analysis and management of the associated risks.



Division of responsibilities between members of the Board



GOVERNOR
Olli Rehn

Olli Rehn is the Governor of the Bank of Finland. He has been in post since 12 July 2018. Governor Rehn is responsible for monetary policy preparation, domestic economic policy, external communications, international affairs and internal audit. The Governor is a member of the Governing Council of the European Central Bank and represents Finland on the Board of Governors of the International Monetary Fund.



DEPUTY GOVERNOR
Marja Nykänen

Marja Nykänen has been a member of the Bank of Finland Board since 1 February 2017. She is responsible for financial stability issues, macroprudential policy, statistics, legal affairs, financial and personnel administration, and security and real estate issues. She also bears responsibility for the risk control of investment activities and monetary policy, the financial stability process and the activities of the Management Group of the Bank of Finland's pension fund. Marja Nykänen is also Chair of the Board of the Financial Supervisory Authority.



MEMBER OF THE BOARD

Tuomas Välimäki

Tuomas Välimäki has been a member of the Bank of Finland Board since 12 July 2018. He is responsible for monetary policy implementation and investment of the Bank's financial assets, as well as payment systems and cash supply. His responsibilities also cover information management, the development of a digital euro, and the Bank's research function, including the Bank of Finland Institute for Emerging Economies (BOFIT). Välimäki is an alternate member of the Governing Council of the European Central Bank.



Hybrid working and revised employee benefits provide flexibility for Bank of Finland staff

After the COVID-19 restrictions were lifted, the Bank of Finland switched to a flexible combination of remote and on-site working. The Bank of Finland also took steps to enhance diversity and equal treatment during 2022 by becoming a signatory to the equality, diversity and inclusion charter of the European System of Central Banks (ESCB), and by taking part in Helsinki Pride 2022. In addition, the results of the Bank of Finland's 2022 management survey exceeded the national average.

At the Bank of Finland, we have 375 staff working in the areas of monetary policy, research, financial markets, banking operations and cash supply.

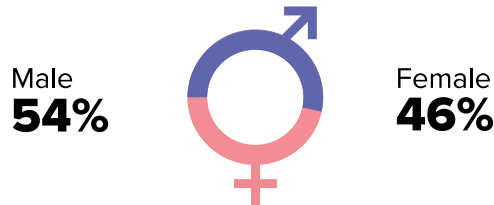
In addition to these core activities, the Bank also has strong in-house expertise in areas such as IT, personnel and financial administration, communications, financial literacy and language services.

The average age of the Bank's staff is 46.1 years. Of the total number of staff, 46% are women and 54% are men. The Bank of Finland provides a pleasant working environment and the Bank's staff are committed to their work. The average length of employment at the Bank is 15.5 years.

Chart 1.

At year-end 2022 the Bank of Finland staff totalled 375

Gender distribution total staff



Sick leave

6.5 days/FTE



Average age

46.1 yrs

Higher education index



Job satisfaction index (national norm for expert staff 73.1%)



Source: Bank of Finland

Combination of remote and on-site working became the new normal

The Bank of Finland's staff were still working mostly from home as a result of the COVID-19 pandemic until 6 March 2022.

The Bank then lifted its pandemic-related restrictions and during spring 2022 it began piloting a system in which staff could combine remote and on-site working. The staff tried out various combinations of working at home and in the office, as well as ways of enhancing the sense of community.

A new policy on remote working was then introduced in August, whereby the staff can, as a rule, work remotely for a maximum of 60% of their work time. Agreement on the specific practices for remote and on-site working is for each team to agree separately.

Remote working has thus become a permanent option at the Bank of Finland. Flexible practices for working at home support the reconciling of work and private life, the development of a workplace culture based on trust, the ability of staff to cope with their work and the promotion of wellbeing at work.

On-site working supports a sense of community

On-site working strengthens the sense of community and working together, and enhances wellbeing at work. Working on the premises with immediate colleagues and others is an integral part of the job for Bank of Finland employees.

The sense of community is bolstered not only by on-site working but through team discussions, jointly agreed practices and attendance at various occasions and events.

Revised employee benefits support new ways of working

In response to the changes in the way we work, the Bank of Finland also revised its main employee benefits. The new employee benefits help foster the wellbeing of staff and support the recruitment of skilled employees and the retention of existing staff at the Bank. The new benefits were introduced at the start of 2023.

The lunch benefit was extended to cover working from home, which helps to ensure that staff take a lunch break and eat healthily when working remotely. Staff on site can continue to enjoy high-quality meals at their staff restaurant.

The commuter-ticket benefit supports travel to and from work and the use of environmentally friendly transport options. Employees can now choose to spend their tax-exempt employee benefit not only on sports, culture and massage services but also commuter tickets.

The employer-subsidised bicycle benefit is a new benefit that supports not only commuting and environmentally friendly travel choices but also staff wellbeing. An employee can acquire a bicycle through lease financing and include the tax-exempt leasing rate in their monthly salary.

The dental care benefit which supports staff wellbeing is being revised to feature a higher maximum annual reimbursement total and by enlarging the network of dental care services to include nine new locations.

Diversity and equal treatment are key values at the Bank of Finland

Diversity, equality and non-discrimination are important values at the Bank of Finland. The Bank of Finland's experts work together as equals and value each other's expertise, viewpoints and individual backgrounds.

The Bank constantly strives to ensure diversity and non-discrimination. During 2022, the Bank of Finland became a signatory to the equality, diversity and inclusion charter of the European System of Central Banks (ESCB).

The Bank also arranged staff events supporting equality, piloted anonymous recruitment and took part in the Helsinki Pride event for the first time.



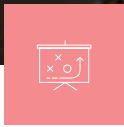
The Bank of Finland undertook to enhance diversity and equal treatment by becoming a signatory to the equality, diversity and inclusion charter of the European System of Central Banks (ESCB).

Results of management survey exceeded national average

The Bank of Finland carries out a management survey each year. The results of the 2022 survey gave the Bank an index score of 75.2. The national average for the year was 73.1.

The survey responses indicated that the Bank of Finland's line managers trust their staff and support professional development, and staff are aware of what is expected of them in their work.

The management survey is also used to monitor implementation of the Bank's management vision. Under the management vision, the aim of management at the Bank is to support achievement of the strategic objectives, inspire and motivate staff to perform well, and support constructive cooperation. Management at the Bank is also based on the view that change can be successfully brought about and that we are all able to improve ourselves.



Bank of Finland budget and operating expenses for 2023

A key objective of the Bank of Finland's strategy as a central bank is to foster a sustainable economy and promote stability. The pursuit of this objective requires determined economic governance and systematic HR planning.

The Bank of Finland monitors its operating expenses and related objectives closely.

The intention is to achieve the Bank's targets for efficiency and sustainability.

The Board evaluates implementation of the objectives on a quarterly basis.

Bank of Finland

In 2022, the Bank of Finland's operating expenses totalled EUR 102.7 million (2021: EUR 96.3 million). Income totalled EUR 16.9 million and was derived from, for example, usage charges, rents and various fees.

The effects of the COVID-19 pandemic were still evident particularly in staff-related expenses, which fell due to there being very few business trips or stakeholder events. There will also be fewer business trips in the future compared with the pre-pandemic situation, as the number of remote and hybrid meetings in the international context has increased.

The impact of inflation was not evident to any significant extent in operating expenses and investment in 2022, largely because of contract prices that had been agreed earlier.

The extent of the net difference between operating expenses and income depends on the amount of rental income from real estate and income from investments other than those in the reserve fund.

The Bank of Finland also has other major sources of income, but these do not have the effect of decreasing operating expenses in the budget and are therefore not included in the table here.

The Bank's net operating expenses totalled EUR 85.8 million. For a more detailed breakdown of the outturn for 2022 and the budget for 2023, see Table 1.

Table 1.

Bank of Finland	Outturn 2022 EUR m	Budgeted 2023 EUR m
Operating expenses and income		
EXPENSES		
Staff expenses	-37.3	-40.1
Staff-related expenses	-2.0	-3.9
Other expenses	-30.0	-35.2
Banking service expenses	-10.4	-8.6
Depreciation	-8.6	-9.5
Total	-88.3	-97.3
Banknote acquisition costs	-6.1	-5.0
Pension fund contribution	-8.3	-8.3
Total operating expenses	-102.7	-110.6
INCOME		
Banking service income	3.8	2.8
Real estate	5.3	5.2

Bank of Finland	Outturn 2022 EUR m	Budgeted 2023 EUR m
Other income	1.1	0.3
Services to FIN-FSA	6.8	7.3
Total income	16.9	15.6
Net	-85.8	-95.0

Due to rounding, the totals do not necessarily tally.

Investment expenditure (Table 2) totalled EUR 9.2 million. The biggest investments were in real estate and IT projects. Investments are evaluated based on their costs, qualitative benefits and operational risks, and attention is focused on the medium-term planning of investment.

In autumn 2022, the Bank's budgets for the period 2023–2025 were drawn up. The Board ratified the budget for 2023.

Table 2.

Bank of Finland	Outturn 2022 EUR m	Budgeted 2023 EUR m
Investment		
Real estate investment	5.0	6.0
Head office premises	1.3	1.5
Vantaa premises	3.1	4.2
Other premises	0.5	0.4
IT equipment and software	4.0	6.1
Cash handling machines	0.0	0.1
Security equipment	0.2	1.5
Other	0.0	0.1
Total investment	9.2	13.9

Due to rounding, the totals do not necessarily tally.

Pension fund

The pension fund's operating expenses for 2022 totalled EUR 31.1 million (2021: EUR 30.8 million). Pensions paid constituted the largest cost item, amounting to EUR 29.2 million. Operating income (employment pension contributions and rental income) amounted to EUR 15.3 million during the year.

The pension fund also received a pension fund contribution of EUR 10.0 million from the Bank, which was used to cover some of the pension fund deficit for the accounting period.

For a more detailed breakdown of the outturn for 2022 and the budget for 2023, see Table 3.

[The pension fund's operations are presented in its own annual report.](#)

Table 3.

Pension fund	Outturn 2022 EUR m	Budgeted 2023 EUR m
Operating expenses and income		
EXPENSES		
Staff expenses	0.0	0.0
Expenses for pension fund activities	-0.3	-0.3
Pension fund real estate expenses	-0.6	-0.6
Depreciation	-1.0	-1.0
Pensions paid	-29.2	-31.8
Total expenses	-31.1	-33.6
INCOME		
Employment pension contributions	13.6	14.5
Internal rents	1.7	1.8
Pension fund contribution	10.0	10.0
Total income	25.3	26.4
Net	-5.8	-7.2

Due to rounding, the totals do not necessarily tally.

Financial Supervisory Authority

The Board of the Bank of Finland ratifies the budget for the Financial Supervisory Authority (FIN-FSA) each year.

The FIN-FSA's operating expenses for 2022 totalled EUR 40.8 million (2021: EUR 39.7 million). Total income amounted to EUR 43.1 million, of which supervision and processing fees accounted for EUR 38.7 million, while the Bank of Finland's contribution to funding was EUR 2.0 million.

The figure for income includes a surplus of EUR 2.4 million from the previous accounting period. The surplus for the financial year was EUR 2.3 million. The surplus will be taken into account in the following accounting period when the supervisory and processing fees are set. Investment expenditure totalled EUR 2.1 million.

For a more detailed breakdown of the outturn for 2022 and the budget for 2023, see Table 4.

[The FIN-FSA's operations are presented in its own annual report.](#)

Table 4.

Financial Supervisory Authority	Outturn 2022 EUR m	Budgeted 2023 EUR m
Operating expenses and income		
EXPENSES		
Staff expenses	-25.1	-27.9
Staff-related expenses	-0.4	-1.2
Other expenses	-5.7	-8.0
Depreciation	-1.1	-1.0
Services from the Bank of Finland	-6.8	-7.3
Pension fund contribution	-1.7	-1.7
Total operating expenses	-40.8	-47.1
FUNDING OF OPERATIONS		
Supervision fees	36.7	41.0
Processing fees	2.1	1.8
Bank of Finland contribution to funding	2.0	2.4
Surplus/deficit transferred from previous year	2.4	1.9
Total income	43.1	47.1
Surplus transferred to next year	-2.3	

Due to rounding, the totals do not necessarily tally.



Bank of Finland's carbon footprint smaller in 2022 as result of emissions reduction measures and adjusted calculation method

The way the Bank of Finland and the Financial Supervisory Authority (FIN-FSA) calculated emissions in 2022 was more precise and comprehensive. Total emissions fell compared to the previous year, as a result of the more precise calculations but also due to the practical measures taken to reduce emissions, such as adjustments to the building services in the properties of the Bank and the FIN-FSA.

The carbon footprint of the Bank and the FIN-FSA was measured in 2022 using the same method as the previous year: the internationally approved and recommended Greenhouse Gas (GHG) Protocol guidelines.

In 2021, the Bank of Finland revised its emission calculation method to correspond to the approach employed by companies and other organisations in determining and reporting greenhouse gas emissions.

In 2022, seeking to further improve the method, adjustments were made in the calculation that reflected more closely the activities of the Bank and the FIN-FSA.

The greenhouse gas emissions from their activities are minimal. Most are indirect emissions occurring in the value chain.

Globally recognised GHG Protocol guides calculation of Bank of Finland's carbon footprint

In 2021, the Bank of Finland switched over to using the recommendations of the international GHG Protocol methodology to calculate its emissions.

The new calculation method means that the results of the emission measurements for 2021 and 2022 cannot be directly compared to those for previous years, although, of course, the results for 2021 and 2022 are comparable with each other.

The GHG Protocol is the standardised method that is used the most in the international context to determine and report on the greenhouse gas emissions of companies and other organisations. This standardised method of calculation gives a firm structure to the process and helps identify the emission sources that are relevant to the operation.

To delineate direct and indirect emission sources, the GHG Protocol identifies three 'scopes' for GHG reporting purposes.

Scope 1: these are direct emissions that occur as a result of an organisation's own operations, and they are the easiest to manage.

Scope 2: these are indirect emissions related to the purchase of energy, such as emissions from the generation of electricity.

Scope 3: these are other indirect emissions, such as those that result from logistics operations and waste management.

The 'scope' classification model reduces the risk of double counting, where different companies and organisations calculate emissions for partly the same operations.

Method for calculating emissions from construction investment revised in 2022

The emission sources from the operations of the Bank of Finland and the FIN-FSA (scope 1 and 2) include the fuel consumption of vehicles and equipment (owned or hired) used in the respective organisations and the consumption of purchased energy in their workspaces and facilities.

Indirect emissions from the generation of purchased energy (scope 2) were calculated using a market-based calculation method that took account of the production methods used by the Bank's and FIN-FSA's energy suppliers. The energy purchased by the organisation is more environmentally friendly than the average for the country.

Indirect emissions in the value chain (scope 3) relate to the purchases made by the Bank and the FIN-FSA, the services they use, construction investment, transport, office waste, business trips, commuting, working from home, and the energy consumption of tenants.

A new emission source was included in scope 3 in 2022 in the shape of emissions from the primary production of fuels purchased during the year.

Furthermore, the emissions calculation for construction investment included in scope 3 was revised as from 2022. Project-specific emissions data was available for 35% of the investment in construction and building repair projects.

The availability of emissions data on the project-specific consumption of materials and energy has meant that calculations for emissions from construction investment are now far more accurate. In future, the aim is to increase the share of project-specific emissions data in the calculation process. For now, investment in construction and building repair projects for which there are no project-specific emissions data will continue to be calculated based on cost, with reference to average emission coefficients.

Practical steps to reduce emissions and adjustments to the way they are calculated meant that the Bank of Finland's carbon footprint was smaller in 2022

The combined carbon footprint for the Bank of Finland and the FIN-FSA was 8,284 tCO₂e in 2022, and that was for the emissions from their own operations plus those in the value chain (excluding investment). In 2021 the carbon footprint figure was 10,120 tCO₂e. Thus, the figure for 2022 was down by 18% on the previous year.

The emissions from the operations of both organisations combined (scope 1 and 2) amounted in 2022 to 1,293 tCO₂e. This was a decrease of 19% compared to the previous year. In 2021 the largest emissions were mostly from the planned discharge of gas extinguishing systems.

The Bank of Finland's car benefit policy was updated in 2022, and in future the organisation will only acquire plug-in or all-electric vehicles. The updated policy will reduce the operation's scope 1 emissions.

At the Helsinki and Vantaa premises, some of the lighting has been replaced with LED lighting, which will cut energy consumption. At the Vantaa site, they have also adjusted the volume of air in the air conditioning system and replaced some of the glass façade with more energy-efficient materials, which will reduce overall energy consumption there. Total energy consumption in the Vantaa premises was down by 11% compared to the previous year.

The effect on emissions associated with energy consumption was less significant, however, because purchased electricity in 2021 was already virtually emission-free. The emission coefficient for district heating production was nevertheless greater in 2022 than in 2021.

Main indirect emission sources are associated with construction, energy consumption and procurement

The indirect emissions in the value chain (scope 3) account for most of the emissions in total (84%). The main indirect emission sources in the value chain were construction investment, energy consumption by tenants, procurement and purchased services.

In 2022, scope 3 emissions amounted to 6,991 tCO₂e, which is 18% less than in 2021.

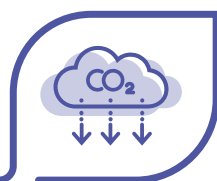
The reduction in emissions was particularly due to the revised, project-specific method for calculating emissions from construction and building repair projects, and, to a lesser extent, to a reduction in emissions from transport. All-electric cars will in future be used for the Helsinki and Vantaa sites' postal and courier deliveries, which will help to further cut emissions from transport.

Scope 3 emissions were down overall, but emissions from procurement, purchased services and business trips made during the year were up on 2021.

The Bank of Finland and the FIN-FSA monitor the environmental impact of their operations using an indicator that presents emissions in proportion to operating expenses. It takes account of all the emissions from their own operations and those in the value chain (scopes 1–3).

Emissions in proportion to operating expenses in 2022 were 77 kg/tCO₂e/EUR 1,000.

The impact on climate of the Bank of Finland's investment activities is dealt with in its own section [Responsible investment brings real emission reductions](#).



The Bank of Finland's carbon footprint shrank by 18%.



Bank of Finland's Data Balance Sheet augments Annual Report

The Bank of Finland's 2022 Data Balance Sheet will be published in English in June 2023. It highlights the importance of data, information and knowledge to the work of the central bank and describes the operating environment for these at the Bank.

The themes of the articles published on the Bank of Finland's Bulletin website in 2022 included cost competitiveness, Russia's war in Ukraine, the energy crisis, rising import prices and falling house prices. The articles conveyed a rather sombre view of the economy, which was under strain during the year due to a number of simultaneous crises.

These economic shocks accelerated the need for data collection and reporting and for analysing data. It is also essential that data is quickly and reliably available for use.

To underpin these efforts, the Bank of Finland returned to its information management roots in 2022 by defining the terminology more clearly and developing the overall architecture as part of an information management development programme. The programme is continuing to the end of 2023.

What is the Data Balance Sheet?

[The Data Balance Sheet](#) serves as a key part of the Bank of Finland's information management reporting.

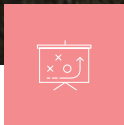
The Data Balance Sheet brings together details of the development work being undertaken in information management and focuses on various aspects of data security and data protection. It also presents figures on the central bank's tasks and on information management and analysis work.

The Data Balance Sheet will be published in English in June after the publication of the Bank of Finland's Annual Report. It serves to complement the Annual Report from an information management perspective.

Events from 2022 and from history

The 2022 Data Balance Sheet includes a selection of articles on topics ranging from the basics of information management through to cash, interest rates and the energy efficiency of buildings.

The Data Balance Sheet also features articles on matters of history going back 200 years. These refer to the protection of historically significant archive materials and also dip into their fascinating content, including material on the Finnish Civil War and the Parliamentary Supervisory Council.



Bank of Finland's indicator targets and their achievement in 2022

31.12.2022

The Bank of Finland is an influential and respected central bank

Guiding principle

1. We create added value through expertise, insightful solutions and confidence-building cooperation.

Public survey on the Bank of Finland's reputation and on public confidence in the Bank

Objective > 75% of Finns have confidence in the Bank of Finland

12/2020	12/2021	12/2022
–	New indicator	83%

Guiding principle

2. We base our statements and decisions on knowledge, research and high-quality analysis.

Quality-weighted volume of research activities.
Quality-weighted index of peer-reviewed articles.

Objective ≥ 32

12/2020	12/2021	12/2022
19	56	41

Guiding principle

3. We participate in social discourse, reach our stakeholders and engage in constructive dialogue in Finland and the Eurosystem.

The visibility and effectiveness index of the
Bank of Finland's media output (Euro & talous
media index)

Objective ≥ 4

12/2020	12/2021	12/2022
New indicator	4.6	4.25

The Bank of Finland maintains price and financial stability in all circumstances

Guiding principle

4. We provide advanced and reliable central bank services for the changing needs of Finnish society.

TARGET services and collateral management

Objective $\geq 93\%$ of respondents satisfied

12/2020	12/2021	12/2022
–	Modified indicator	100%

Statistics users and reporters

Objective $\geq 80\%$ of respondents satisfied

12/2020	12/2021	12/2022
–	Modified indicator	91%

Professional cash handlers

Objective $\geq 75\%$ of respondents satisfied

12/2020	12/2021	12/2022
–	Modified indicator	90%

General availability of cash

Objective **80% of consumer survey respondents satisfied**

12/2020	12/2021	12/2022
89%	89%	91%

Guiding principle

5. We ensure operational continuity by preparing for changes, disruptions and crises.

Reserve fund + reserves relative to the assessed balance sheet risks.

Objective We accumulate reserves to achieve a sufficiently strong balance sheet under all circumstances.

12/2020	12/2021	12/2022
EUR 6,686 million	EUR 6,807 million	EUR 6,622 million

Number of severe disruptions. Extensive disruptions or system disturbances to critical business operations affecting the Bank of Finland or the Financial Supervisory Authority and lasting longer than one hour.

Objective **0**

12/2020	12/2021	12/2022
0	0	0

Guiding principle

6. We develop our expertise and working practices on a long-term basis and with an eye to the future.

Our management index surpasses the outcomes of external peer groups.

Objective **2020: ≥ 71.7; 2021: ≥ 69.9; 2022: ≥ 73.1**

12/2020	12/2021	12/2022
74.1	73.4	75.2

Our job satisfaction index surpasses the outcomes of external peer groups.

Objective **2021: ≥ 71.5**

12/2020	12/2021	12/2022
Measurement every second year	73.6	Measurement every second year

Annual implementation of individual development plans

Objective **Over 80% of plans implemented well**

12/2020	12/2021	12/2022
79%	80%	72%

Guiding principle

7. We act responsibly and in accordance with the principles of sustainable development.

Carbon footprint, total emissions/operating expenditure of the Bank of Finland and the Financial Supervisory Authority

Objective	Downward trend	
	12/2020	12/2021
-	98 kg carbon dioxide / EUR 1,000	77 kg carbon dioxide / EUR 1,000

Observance of the UN Principles for Responsible Investment

Objective	Areas for improvement based on PRI reporting and/or the assessment framework and integrated with the action planning process	
12/2020	12/2021	12/2022
-	-	Areas for improvement integrated with the action plans.

Guiding principle

8. We carry out our activities effectively and efficiently, maintaining stable profit distribution to the State without jeopardising the Bank's capital adequacy.

Distributed profit to the State

Objective	Predictable profit distribution	
12/2020	12/2021	12/2022
EUR 100.0 million	EUR 26.3 million	0 EUR

Interest income plus the yield on investment assets above the 5-year average of the average central bank interest on the currencies in the currency reserve

Objective	> 0	
12/2020	12/2021	12/2022
New indicator	Interest income 0.8%, yield on investment assets 2.4%	Interest income -0.15%, yield on investment assets 0.90%

Combined full-time equivalent of permanent, fixed-term and temporary staff

Objective	2022: ≤ 398.5	
12/2020	12/2021	12/2022
364	376	375

Aggregate departmental operational expenditure

Objective	2022: ≤ 68 EUR million	
12/2020	12/2021	12/2022
EUR 55 million	EUR 58 million	EUR 61 million

Guiding principle

9. We promote citizens' knowledge of the economy, the Bank of Finland and the Eurosystem by providing understandable information.

Number of visits to the Bank of Finland Museum incl. participation in virtual events

Objective	Upward trend	
12/2020	12/2021	12/2022
New indicator	New indicator	10,535

Time spent on the Bank of Finland's websites

Objective	Average duration of visit \geq 1 minute	
12/2020	12/2021	12/2022
New indicator	1 minute 06 seconds	1 minute 43 seconds

Engagement rate for social media posts (Twitter)

Objective	\geq 3%	
12/2020	12/2021	12/2022
New indicator	1.5%	2.2%



Annual report

The Eurosystem is responsible for the single monetary policy of the euro area. The main objective of monetary policy is to keep prices stable in the euro area, so that the value of money is held more or less unchanged and strong purchasing power is preserved. Monetary policy decisions are guided by the monetary policy strategy of the European Central Bank (ECB). The ECB published a new monetary policy strategy in 2021.

The Bank of Finland contributes to maintaining financial stability in Finland. It assesses risks to the financial system, compiles financial statistics and prepares macroprudential policy. In 2021, the Bank of Finland promoted domestic financial stability particularly via measures that curb excessive indebtedness. The financial sector's role in the mitigation of climate change became increasingly important.

The Bank of Finland is responsible for the availability and issuance of euro cash in Finland. In addition to cash supply, the Bank of Finland's duties include oversight, i.e. the assessment of the reliability and efficiency of domestic payment and securities settlement systems. In 2021, the COVID-19 pandemic further strengthened the decline in the use of cash and the transition in payment habits.

Holding and managing foreign reserves are among the statutory tasks of the Bank of Finland. The Bank of Finland's asset performance was favourable in 2021. Investments in equity and real estate saw especially good returns. It was, however, a challenging year for fixed-income investments. In 2021, sustainability became the fourth objective of investment activities, alongside security, liquidity and return. The aim is for a carbon-neutral investment portfolio.

The Bank of Finland's influence is based on expertise and research. The Bank participates in social debate and promotes financial literacy in Finland. In 2021, the Bank of Finland Museum expanded its activities to include a Financial Literacy Centre.

A central bank's sustainability starts with its core functions. Our mission is rooted in the building of sustainable economic stability, thereby fostering the wellbeing of the general public.



Monetary policy

- 44 **European Central Bank began normalising its monetary policy in 2022**
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- 64 **Net asset purchases under monetary policy purchase programmes ended in 2022**

Monetary policy

The Eurosystem, comprising the national central banks of the euro area and the European Central Bank (ECB), is responsible for conducting the single monetary policy of the euro area. The main objective of the Eurosystem is to keep euro area inflation at 2% over the medium term. In 2022, a surge in inflation prompted the ECB to raise its key interest rates.

As a member of the Eurosystem, the Bank of Finland participates in the preparation of the euro area's single monetary policy and in the related decision-making and is responsible for the policy's implementation in Finland.

Inflation increased sharply across the euro area in 2022, which prompted the ECB to begin the normalisation of its monetary policy, i.e. reduce its monetary policy stimulus measures.

Interest rates were raised and net asset purchases ended in 2022 as part of monetary policy normalisation

In 2022, the ECB embarked on the normalisation of its monetary policy by sharply raising its key interest rates, recalibrating its asset purchase programmes, phasing out its collateral easing measures implemented during the COVID-19 pandemic and tightening the interest rate conditions on its longer-term refinancing operations.

The key ECB interest rates were initially raised in July 2022 and then raised three more times during the remainder of the year. The aim of raising interest rates is to stabilise inflation at the 2% target level over the medium term.

The raising of key interest rates is also reflected in higher market rates, such as the 12-month Euribor rate.

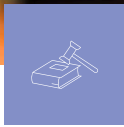
As part of its overall monetary policy normalisation, the ECB ended its net purchases under the pandemic emergency purchase programme (PEPP) in March 2022. Net asset purchases under the asset purchase programme (APP) were ended in June.

Climate considerations incorporated into ECB corporate sector purchase programme

In October 2022, the ECB began incorporating climate change considerations into its corporate sector purchase programme (CSPP). The ECB aims to gradually decarbonise its corporate bond holdings so that its portfolio is aligned with the goals of the Paris Agreement.

The Eurosystem will tilt its reinvestments of maturing securities under the programme towards issuers with a better climate performance. In addition, the Eurosystem will use a climate score to adjust its bids on the primary market to favour issuers with a better climate performance and green bonds that fulfil particular criteria.

These climate measures will be pursued without prejudice to the Eurosystem's primary objective of maintaining price stability.



European Central Bank began normalising its monetary policy in 2022

Surging inflation prompted the European Central Bank (ECB) to begin monetary policy normalisation. The ECB tightened its monetary policy in stages during the year, raising its key interest rates and recalibrating its monetary policy purchase programmes. In 2022, the ECB also transitioned from issuing forward guidance to taking policy rate decisions meeting by meeting on the basis of incoming data.

Monetary policy responds to changing inflation outlook in 2022

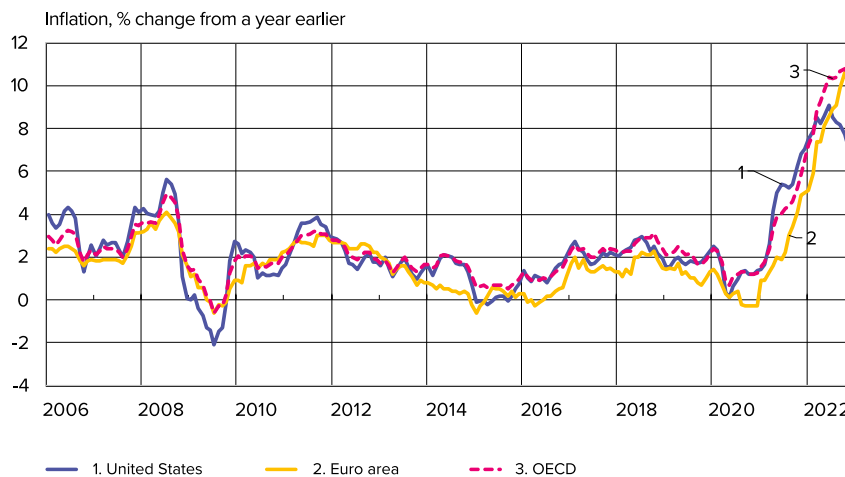
Before 2022, interest rates were exceptionally low and the ECB's key policy rates were negative. Interest rates were low because the outlook for inflation was weak: inflation was projected to remain persistently below the ECB's inflation target.

The global economic crisis caused by the COVID-19 pandemic resulted in a heightened risk of deflation. Central banks responded to the economic crisis by introducing a very accommodative monetary policy stance and, at the lower bound of interest rates, stimulating the economy through asset purchases and longer-term refinancing operations.

As the COVID-19 pandemic subsided, the rise in inflation in 2022 was stronger and more persistent than had been projected. Inflation surged worldwide (Chart 2). Post-pandemic market-based inflation expectations rose significantly in both the United States and the euro area.

Chart 2.

Inflation increased globally in 2022



Sources: Eurostat, national statistical authorities and OECD.

In the euro area, the surge in inflation has been attributable to a combination of increased global demand following the pandemic, a strong upward trend in import prices and pandemic-related supply disruptions. Because the euro area is dependent on energy imports, the surge in energy prices caused by Russia's invasion of Ukraine pushed up inflation more in the euro area in 2022 than in the United States.

Central banks responded to the high level of inflation by tightening their monetary policy. The ECB launched a gradual normalisation of its monetary policy, meaning that it began raising its key interest rates and phasing out non-standard monetary policy measures.

Using monetary policy to bring inflation down to the medium-term price stability objective is not a quick process, however. Monetary policy will influence the medium-term outlook for inflation and the way in which wages and inflation expectations are affected by the supply disruptions that are putting pressure on costs.

Policy rates are the main tool in monetary policy normalisation

[Monetary policy normalisation](#) means that key interest rates – or policy rates – are once again becoming the main tool for setting monetary policy. At the same time, asset purchases and other non-standard monetary policy measures are gradually being ended. Normalisation will lead to a tightening of financing conditions, which will reduce inflationary pressures in the economy.

In the euro area, the process of monetary policy normalisation started in December 2021, when the ECB Governing Council decided on a set of principles for tightening its monetary policy. Net asset purchases would be reduced gradually. Policy rates in the euro area would be raised only after the termination of net asset purchases.

The ECB communicated cautiousness over its interest rate policy. Euro area interest rates had been exceptionally close to the effective lower bound for a prolonged period, leaving little room for lowering nominal interest rates further (see [Recent economic crises have modified the Bank of Finland's market operations](#)). The aim was to avoid a premature tightening of monetary policy after the pandemic.

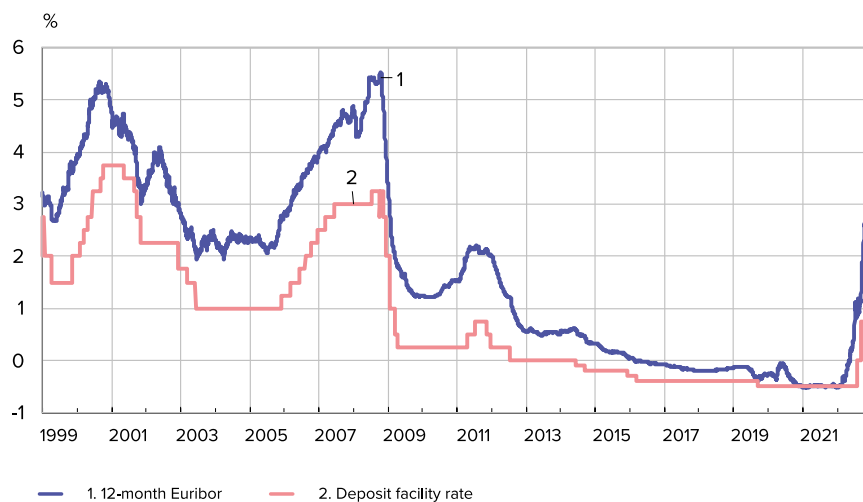
With inflation rising faster and more persistently than expected, the ECB Governing Council has raised the key ECB interest rates at an exceptionally quick pace since its monetary policy meeting in July 2022. Between July and December, the ECB deposit facility rate was raised from -0.5% to 2%, a cumulative hike of 2.5 percentage points. The Governing Council has also signalled that further interest rate rises will be required in the near future.

The interest rate increases ended a seven-year period of negative interest rates in the euro area. At the same time, the ECB Governing Council has transitioned from issuing forward guidance to taking decisions on policy rates meeting by meeting and based on incoming data.

The pace of monetary policy tightening is determined according to the inflation outlook and inflation expectations, with the objective of bringing inflation down to the target of 2% over the medium term. Market rates, such as the 12-month Euribor rate, have increased on the back of higher policy rates (Chart 3).

Chart 3.

Monetary policy tightening sharply raised euro area interest rates in 2022



Source: European Central Bank.

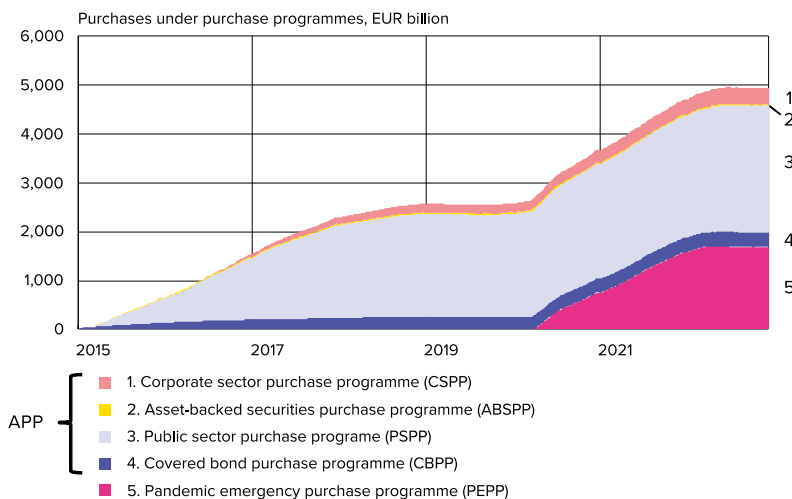
ECB also ended its net asset purchases

In July 2022, the ECB ended its net purchases of assets. However, it continued to reinvest, in full, the principal payments from maturing securities held in its portfolio. In December 2022, the ECB Governing Council decided that from March 2023 onwards, it would begin gradually reducing the amount of these reinvestments.

Following the discontinuation of net asset purchases and longer-term refinancing operations, the ECB's balance sheet has no longer been growing. The balance sheet currently stands at about EUR 8 trillion, equivalent to about 65% of euro area GDP. The asset purchase programmes account for about EUR 5 trillion of the ECB balance sheet (Chart 4).

Chart 4.

Securities purchases under the ECB's purchase programmes were no longer increasing



Source: European Central Bank.

A special characteristic of the euro area's monetary policy is the diversity of growth figures among the euro area national economies. This could, in the extreme, lead to a differentiation of financial markets in the euro area and prevent the appropriate transmission of the monetary policy stance to market rates and lending rates. Besides the effects of monetary policy normalisation, the general uncertainty associated with the economic environment and the sustainability of public debt has contributed to a rise in the long-term yields on euro area government bonds.

If unwarranted or disorderly market dynamics were to pose a serious threat to the transmission of monetary policy across the different countries of the euro area, the Governing Council has at its disposal a number of tools to safeguard the transmission mechanism such that it can ensure it delivers on the ECB's price stability mandate. One such tool is flexibility in the portfolio reinvestments of maturing securities purchased under the pandemic emergency purchase programme (PEPP). In July, the Governing Council approved the new [Transmission Protection Instrument \(TPI\)](#) to further secure the transmission of monetary policy.

Effective transmission of monetary policy in all circumstances will support the normalisation of monetary policy and achievement of the inflation target over the medium term. To achieve price stability in the euro area, it is essential that the ECB operates independently in determining its monetary policy stance and that countries' debt-servicing capacity is at a sustainable level.



European Central Bank's monetary policy formulation and implementation in 2022

The European Central Bank (ECB) tightened its monetary policy rapidly in the latter half of 2022 by raising interest rates and reducing liquidity. The ECB will continue to tighten monetary policy in 2023 to ensure a sustained return of inflation to the target of 2% over the medium term.

The main objective of the Eurosystem's monetary policy is to maintain price stability in the euro area. The price stability objective defined by the ECB's Governing Council means a symmetric 2% inflation target over the medium term. This allows the value of money to remain more or less unchanged and purchasing power to remain strong.

The ECB's monetary policy also supports other EU economic policy goals wherever possible, such as sustainable economic growth and employment, provided that this does not prejudice the price stability objective.

The Eurosystem comprises the European Central Bank and the national central banks of the euro area. As a member of the Eurosystem, the Bank of Finland participates in the preparation, decision-making and implementation of the euro area's single monetary policy. The Governor of the Bank of Finland, Olli Rehn, is a member of the Eurosystem's highest decision-making body, the Governing Council of the ECB.

Key interest rates were raised and liquidity reduced

The ECB tightened its monetary policy throughout the course of 2022.

At the start of 2022 the key ECB interest rates were at -0.50% (deposit facility rate), 0.00% (main refinancing operations rate) and 0.25% (marginal lending facility rate).

By the end of 2022 the key rates had each been raised by altogether 2.5 percentage points and stood at 2.00%, 2.50% and 2.75%, respectively.

The Governing Council signalled that it would continue raising interest rates until it saw a sustained return of inflation to the target of 2% over the medium term.

In October 2022, the Governing Council decided to change the terms and conditions of the third series of targeted longer-term refinancing operations (TLTRO III). The interest rates on outstanding TLTROs III were adjusted, and banks were offered additional days for making early voluntary liquidity repayments.

The pandemic emergency purchase programme (PEPP) was ended in March 2022, and the asset purchase programme (APP) in July 2022.

In December 2022, the ECB's Governing Council decided that from the beginning of March 2023, it will reduce its reinvestment of maturing securities purchased under the APP at an average monthly pace of EUR 15 billion until the end of June, and that the subsequent pace of reinvestments will be determined over time. As a result of the decision, the ECB balance sheet will begin to shrink.

Uncertain economic outlook at the start of 2022

In its February 2022 assessment, the Governing Council concluded that GDP growth would likely remain subdued in the first quarter and that inflation would continue to rise.

Growth was seen as picking up in the latter half of the year, and inflation was expected to remain elevated but to moderate towards the end of the year.

Based on this information, the Governing Council, at its February meeting, confirmed its earlier monetary policy decisions taken in December 2021, including the decision to discontinue net purchases under the PEPP by the end of March 2022.

Economic outlook deteriorated in the spring

At its monetary policy meeting in March 2022, the ECB's Governing Council noted that the outlook for growth and inflation had been weakened by Russia's invasion of Ukraine at the end of February.

It was considered that the full impact of the conflict would depend not only on the particular course it would take, but also on the effect of the sanctions and on other factors. Above all, it was considered that the conflict would bring additional economic uncertainty.

ECB staff projections for euro area GDP growth were revised downwards. The new projections put real GDP growth at 3.7% in 2022, 2.8% in 2023 and 1.6% in 2024.

Inflation was forecast to be 5.1% in 2022, 2.1% in 2023 and 1.9% in 2024. Although inflation was seen as rising, longer term inflation expectations nevertheless remained anchored near the 2% inflation target.

Based on this information, the Governing Council decided to expedite the reduction of net purchases under the APP by announcing a purchase schedule of EUR 40 billion in April, EUR 30 billion in May and EUR 20 billion in June. The future of the APP would be decided in the third quarter of 2022.

At its monetary policy meeting in **April**, the Governing Council noted that inflation had increased significantly, mainly because of a sharp rise in energy costs.

Based on this information, the Governing Council judged that net asset purchases under the APP should be concluded in the third quarter. In addition, the Governing Council assessed that it would continue to reinvest the principal payments from maturing securities purchased under the PEPP until at least the end of 2024.

Key interest rates raised during the summer

In **June**, the Governing Council assessed that GDP growth would slow and inflation accelerate further in the immediate years ahead.

Eurosystem staff projections for GDP growth in the euro area were revised downwards for 2022 and 2023 but revised slightly upwards for 2024. The revised projections put real GDP growth at 2.8% in 2022, 2.1% in 2023 and 2.1% in 2024.

Inflation projections for 2022 and 2023 were revised upwards significantly as a result of soaring energy prices. However, inflation was expected to return to close to 2% over the medium term on account of moderating energy costs, the easing of supply disruptions and the normalisation of monetary policy. The revised projections showed inflation to be 6.8% in 2022, 3.5% in 2023 and 2.1% in 2024.

Based on this information, the Governing Council decided to end its net purchases under the APP already on 1 July 2022. APP reinvestments were planned to continue for an extended period of time past the date when the Governing Council started raising the key ECB interest rates.

The Governing Council also announced it was intending to raise the key ECB interest rates in July and September and also beyond September. This would mark the end of the Governing Council's long-standing policy of low interest rates and commitment-based forward guidance.

In July, the Governing Council decided to raise the three key ECB interest rates by 0.5 percentage points to ensure the return of inflation to the 2% target over the medium term. It also concluded that further rate hikes would be necessary at its future meetings.

In addition, the Governing Council approved the Transmission Protection Instrument (TPI), a new monetary policy tool for supporting the effective transmission of monetary policy to the economy. The TPI can be activated to counter unwarranted, disorderly market dynamics that pose a serious threat to the transmission of monetary policy across all euro area countries.

Interest rate hikes continued in the autumn

At its monetary policy meeting in **September**, the ECB's Governing Council noted that inflation projections had been revised upwards for 2022 and 2023. Accordingly, inflation was projected to be 8.1% in 2022, 5.5% in 2023 and 2.3% in 2024.

The Governing Council observed that inflation will start to fall over time as the current drivers of inflation fade and the normalisation of monetary policy works its way through to the economy and to price-setting.

The ECB staff revised its GDP growth projections downwards for 2023. The revised projections for real GDP growth were 3.1% in 2022, 0.9% in 2023 and 1.9% in 2024.

Based on this information, the Governing Council decided to further raise the ECB key interest rates by 0.75 percentage points. In addition, it signalled the need for further rate hikes over several meetings. The pace of these hikes would be determined by incoming data and the evolving inflation outlook.

Following the raising of the deposit facility rate above zero, the Governing Council decided that the two-tier system for the remuneration of excess reserves was no longer necessary. It therefore decided to suspend the two-tier system.

At its monetary policy meeting in **October**, the Governing Council took the view that inflation was still far too high and would remain above target for an extended period. In September, euro area inflation reached 9.9%.

Based on this information, the Governing Council raised the ECB's key interest rates by 0.75 percentage points. It also noted that it would decide its future policy rate path meeting by meeting and on the basis of the evolving outlook for inflation and the economy.

The Governing Council also decided to adjust the terms of its TLTRO III operations. In addition, it decided that the remuneration of minimum reserves held by credit institutions with Eurosystem central banks would be set at the ECB's deposit facility rate in order to align this more closely with money market conditions.

Monetary policy tightening continued at end of year

At its monetary policy meeting in **December**, the ECB's Governing Council noted that inflation still remained far too high and would likely stay above target for an extended period.

According to the Eurosystem staff projections, the slowdown in euro area GDP growth would be short-lived, but growth would nevertheless remain subdued in 2023 and be significantly lower than had been projected in June.

Euro area growth was projected to recover only after prevailing headwinds had abated. The projections for real GDP growth were 3.4% in 2022, 0.5% in 2023, 1.9% in 2024 and 1.8% in 2025.

Eurosystem staff projections for inflation were revised significantly upwards from their June levels. In the revised projections, inflation was seen as reaching 8.4% in 2022, 6.3% in 2023, 3.4% in 2024 and 2.3% in 2025.

On the basis of this information, the Governing Council decided to raise all three key ECB interest rates by 0.50 percentage points. The Governing Council noted that on the basis of the Eurosystem staff projections, inflation will not be slowing in the desired manner and so further interest rate increases will have to be made.

The Governing Council decided that from the beginning of March 2023, it will reduce its reinvestments of maturing securities purchased under the APP at an average monthly pace of EUR 15 billion until the end of June, and that the subsequent pace of reinvestments will be determined over time.



Eurosystem began phasing out its non-standard monetary policy measures during 2022

In 2022, the Eurosystem began normalising its monetary policy. It raised its key interest rates, stopped increasing its monetary policy securities holdings, began gradually phasing out its pandemic collateral easing measures, and tightened the conditions of its longer-term refinancing operations.

The Bank of Finland is responsible for [implementing the Eurosystem's monetary policy](#) in Finland. The tools for implementing this monetary policy can be divided into standard and non-standard measures.

The Eurosystem's standard measures are: standing facilities; regular refinancing operations conducted as tender procedures against collateral; and the minimum reserve requirement. Standard monetary policy measures primarily influence short-term market rates.

The Eurosystem's non-standard measures include: asset purchase programmes; loans through longer-term refinancing operations; and changes in collateral policy. These measures have been at the heart of monetary policy since the start of the global financial crisis in 2007, continuing through to the COVID-19 pandemic crisis. In 2022, the Eurosystem began phasing out these non-standard measures as part of an overall normalisation of monetary policy.

Interest rates were raised sharply in 2022

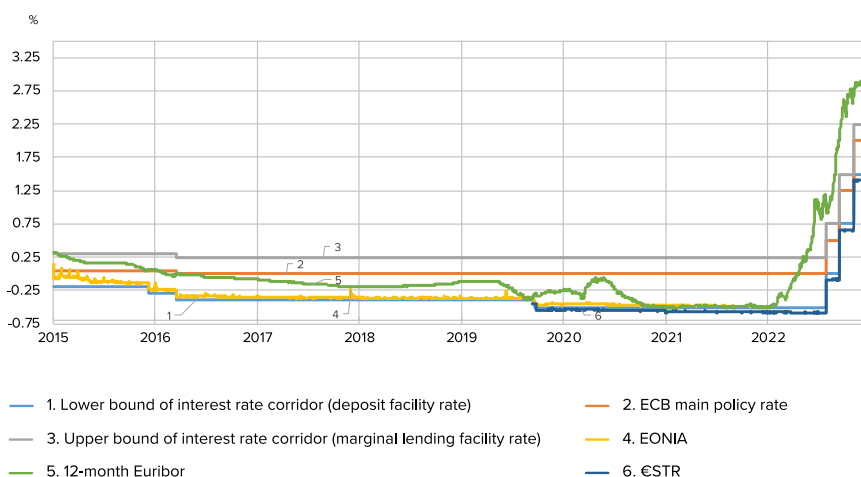
The Governing Council of the European Central Bank (ECB) raised its key interest rates four times in 2022, starting in July. Each of the key rates was raised by altogether 2.5 percentage points during the year. The Eurosystem's deposit facility rate, main refinancing operations rate and marginal lending facility rate stood at 2.00%, 2.50% and 2.75%, respectively, at the end of the year (Chart 5).

At its December meeting, the Governing Council signalled it would continue to raise interest rates significantly higher at a steady pace. This is to ensure a timely return of inflation to the 2% target.

The Governing Council also announced that by the end of 2023 it would review its operational framework for steering short-term interest rates.

Chart 5.

Key ECB interest rates and money market rates



Sources: European Central Bank, European Money Market Institute and Bank of Finland.
EONIA fixed to €STR as from 2 October 2019 (EONIA = €STR + 8.5 basis points).

The euro short-term rate (€STR) closely tracked the movement of the ECB's deposit facility rate. However, the pass-through of higher interest rates to the repo market was hindered by collateral scarcity, among other issues. The Governing Council helped relieve the collateral shortage by increasing the upper limit for securities lending against cash collateral.

Longer term reference rates such as the 3-month and 12-month Euribor (euro interbank offered rate) rose on the back of higher interest rate expectations and stood at 2.13% and 3.29%, respectively, at the end of the year.

Bank of Finland’s monetary policy counterparties unchanged

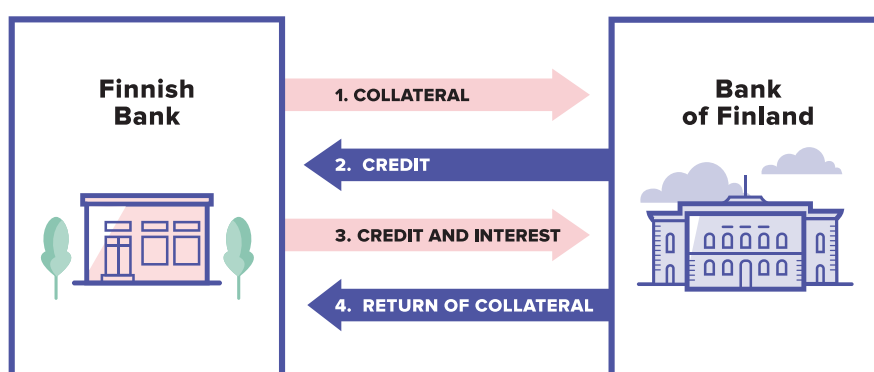
To operate as counterparties in monetary policy operations, credit institutions are [required to hold a minimum level of reserves](#), to be subject to financial supervision, to be financially sound and to fulfil operational requirements.

At the close of 2022, the Bank of Finland had 16 monetary policy counterparties. These counterparties remained unchanged from the previous year. They comprised Finnish credit institutions and branches of Nordic banks operating in Finland.

Counterparties may seek collateralised financing from the Eurosystem by participating in Eurosystem refinancing operations. Counterparties may also receive overnight credit against eligible assets through the ECB’s marginal lending facility for repayment the next business day. Intraday credit, to ensure smooth payment flows, is similarly available against collateral. Counterparties may also make deposits with the central bank.

Chart 6.

Granting credit to banks



Source: Bank of Finland.

The Eurosystem has specified eligibility criteria for assets that can be used as collateral in central bank credit operations. These criteria are [outlined in the ECB’s guidelines](#) and are the same throughout the euro area.

In addition, the Bank of Finland has supplemented the ECB’s guidelines with [additional domestic requirements](#) for its own counterparties. The Bank of Finland updated these requirements three times during 2022.

Substantial repayments of longer-term refinancing operations in 2022

The Eurosystem continued to conduct its weekly main refinancing operations (MROs) and monthly three-month longer-term refinancing operations (LTROs) as fixed-rate tender procedures with full allotment.

Demand for these operations still remained very low in both the Eurosystem and Finland.

The Eurosystem did not conduct new targeted longer-term refinancing operations (TLTROs) in 2022.

The first two operations conducted under TLTRO III matured in 2022, resulting in EUR 54 billion of repayments by banks at the Eurosystem level.

In addition, banks had the option of making early repayments of TLTRO III operations in March, June, September, November and December. At the Eurosystem level, banks' early repayments totalled EUR 826 billion, with EUR 6 billion paid by Finnish banks.

The outstanding volume of TLTRO III operations shrank during the year from EUR 2.198 trillion to EUR 1.318 trillion at the Eurosystem level, and from EUR 36 billion to EUR 30 billion for Finnish banks.

At its meeting on 27 October, the Governing Council decided to adjust the interest rate conditions of its outstanding TLTRO III operations. Starting from 23 November 2022, the interest rate is to be indexed to the average applicable key ECB interest rates between that date and the repayment date of the TLTRO III. The Governing Council also decided on additional voluntary early repayment dates for banks.

The recalibration of the TLTRO III terms and conditions will contribute to the pass-through of higher interest rates to bank lending and bank funding costs. With the methodological change, the interest rates on outstanding TLTRO III operations now respond more swiftly to changes in the key ECB interest rates. The decision contributes to the overall normalisation of monetary policy that is being conducted to restore price stability.

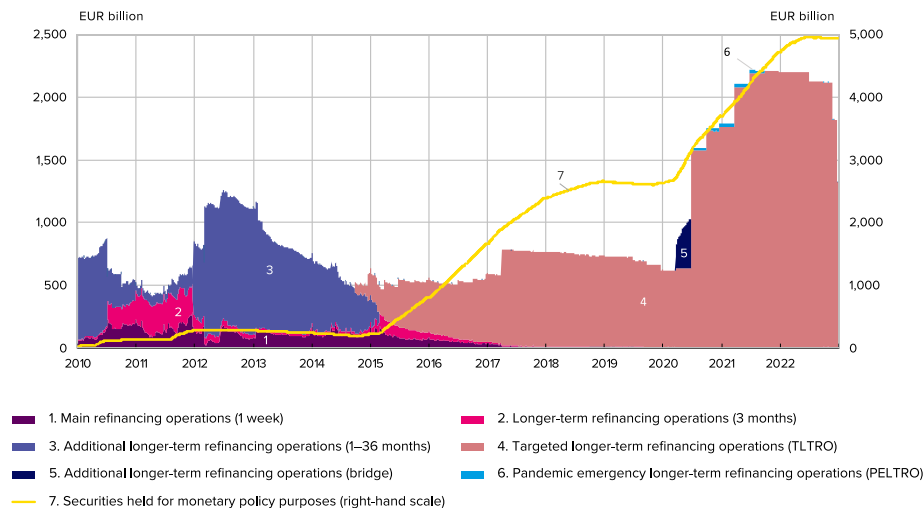
After the revised TLTRO III conditions came into effect, euro area banks increased their voluntary early repayments in November and December.

The Governing Council is monitoring the impact of TLTRO III repayments on the overall stance of monetary policy.

The amount of outstanding pandemic emergency longer-term refinancing operations (PELTROs) was very small in 2022, with the final operation due to mature in early 2023.

Chart 7.

The Eurosystem's liquidity-providing operations (tender operations and asset purchase programmes)



ECB maintained liquidity arrangements with other central banks in 2022

In 2022, the Eurosystem ensured the availability of globally important currencies by maintaining existing arrangements with other central banks. The permanent currency swap arrangements between the Eurosystem and the central banks of the United States, the United Kingdom, Japan, Switzerland and Canada remained unchanged.

The Eurosystem continued to offer US dollar-denominated financing at the March 2020 reduced rate during 2022. As in previous years, the demand for US dollar-denominated refinancing remained low.

The Eurosystem again ensured that euro-denominated liquidity remained available outside the euro area as well.

The ECB decided to continue its repo facility for non-euro area central banks (EUREP, Eurosystem repo facility for central banks), its bilateral swap line with Poland's central bank agreed in March, and its bilateral repo lines with the central banks of Albania, Andorra, Hungary, North Macedonia, Romania and San Marino, until 15 January 2024.

The Eurosystem also extended its bilateral currency swap arrangement with the central bank of China until 8 October 2025.

Liquidity surplus in euro area banking system began to shrink

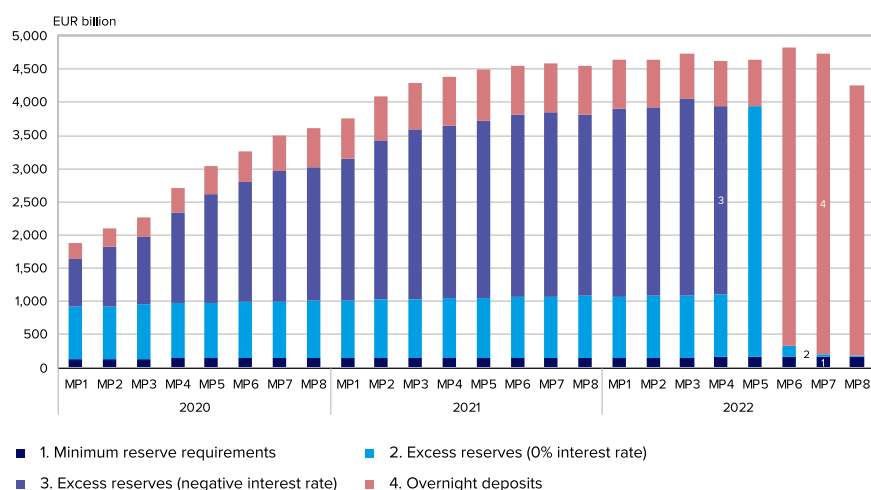
Excess liquidity in the euro area banking system, i.e. banks' liquidity holdings with central banks in excess of the minimum reserve requirement, decreased from about EUR 4.390 trillion during the final reserve maintenance period of 2021 to approximately EUR 4.080 trillion during the corresponding period of 2022 (Chart 8).

Excess current account holdings with the Eurosystem are remunerated at the lower of either the Eurosystem deposit facility rate or 0%. With the deposit facility rate being raised above 0%, banks began almost exclusively holding their excess liquidity with the Eurosystem's deposit facility (as overnight deposits) from the sixth maintenance period onwards, rather than holding excess liquidity in their central bank current accounts (Chart 8).

The euro area's total excess liquidity continued to grow in the early part of the year, especially as net asset purchases were still ongoing, but began to shrink towards the end of the year due to TLTRO III repayments.

Chart 8.

Bank's liquidity holdings with the Eurosystem: averages per maintenance period

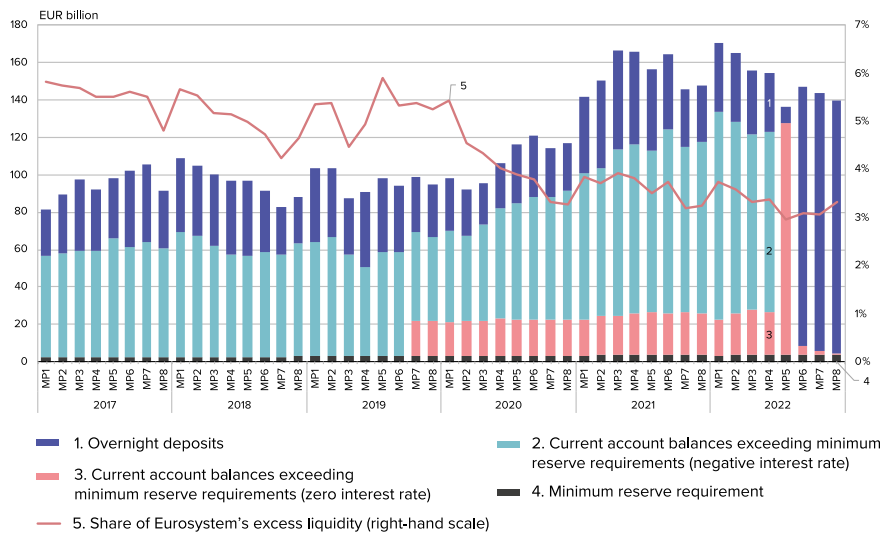


Sources: European Central Bank and Banque de France.

Liquidity holdings with the Bank of Finland in excess of the minimum reserve requirement in 2022 averaged EUR 148 billion, compared with EUR 151 billion in 2021. The minimum reserve requirement was, on average, only about EUR 3.8 billion (Chart 9).

Chart 9.

Liquidity deposits with the Bank of Finland



Source: Bank of Finland.

As a proportion of the total excess liquidity deposited across the Eurosystem, the holdings deposited with the Bank of Finland in excess of the minimum reserve requirement shrank slightly from the previous year, to an average of 3.3%.

The Governing Council suspended its two-tier system for the remuneration of excess reserves in September, as it was seen as redundant with the deposit facility rate having been raised above 0%.

Finnish banks made almost full use of the tier exempted from the negative rate (six times the minimum reserve requirement) right up until the suspension of the two-tier system.

At its meeting on 8 September 2022, the Governing Council decided to remove the 0% interest rate ceiling for the remuneration of central government deposits. The new ceiling is now the lower of either the Eurosystem's deposit facility rate or the euro short-term rate (€STR). The decision is temporary and is intended to remain in effect until 30 April 2023.

The aim of the decision is to preserve the effectiveness of monetary policy transmission and safeguard orderly market functioning, as well as to prevent an uncontrolled outflow of government deposits into the money market.

At its meeting on 27 October 2022, the Governing Council decided to set the remuneration of minimum reserves at the deposit facility rate instead of the main refinancing operations rate as of 21 December 2022. The deposit facility rate better reflects the rate at which funds can be invested in money market instruments if not held as minimum reserves and the rate at which banks borrow funds in the money market to fulfil minimum reserves.

Phasing out of pandemic collateral easing measures begun

[In March 2022, the ECB's Governing Council](#) decided to begin gradually phasing out its package of pandemic collateral easing measures introduced in April 2020.

As a first step starting on 8 July 2022, collateral valuation haircuts across all eligible assets were restored closer to pre-pandemic levels. The limit on the use of unsecured bank bonds as collateral was also reduced to its previous level of 2.5%.

The grandfathering of the eligibility of marketable assets that fulfilled minimum credit quality requirements on 7 April 2020 was suspended, and certain easing measures in domestic additional credit claim (ACC) frameworks were removed. In addition, a number of technical amendments [announced by the ECB in May 2022](#) were incorporated into the Eurosystem's collateral framework.

As part of the phasing out of pandemic easing measures, the Bank of Finland decided to remove the eligibility of credit claims backed by government or public sector COVID-19 guarantees from its ACC framework as of 8 July 2022.

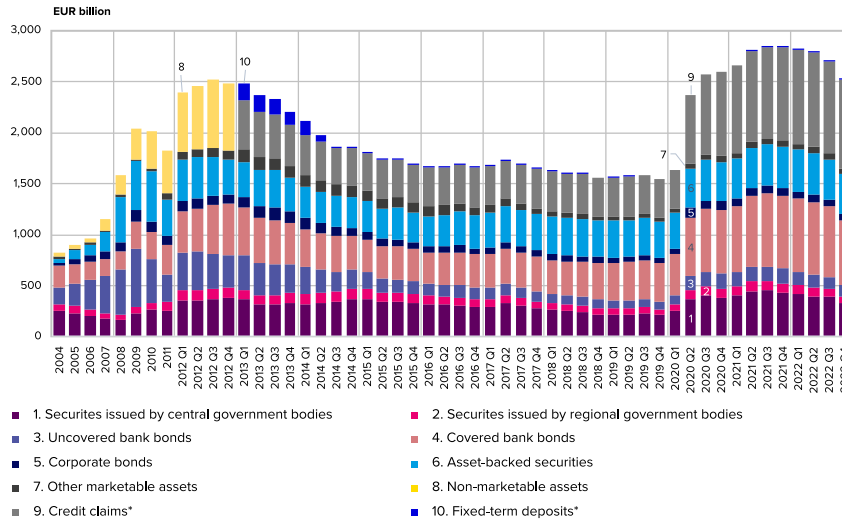
In July 2022 the Governing Council also decided on further steps to [include climate change considerations in the Eurosystem's monetary policy framework](#). Some of these measures will also affect the Eurosystem's collateral framework in the coming years.

Amount of collateral pledged began to decline

The total amount of collateral provided to the Eurosystem stopped growing and instead began to decrease in 2022 (Chart 10). In 2022, banks deposited collateral averaging a total value of approximately EUR 2.700 trillion with the Eurosystem's central banks; in 2021, the corresponding figure was about EUR 2.800 trillion.

Chart 10.

Collateral deposited with the Eurosystem



Source: European Central Bank.
*Breakdown available from 2013 onwards.

Collateral deposited with the Bank of Finland by the Bank’s counterparties in 2022 amounted to an average value of about EUR 40 billion, which was more or less unchanged from the previous year.

The amount of collateral deposited began to shrink towards the end of the year, however, as banks repaid their longer-term refinancing operation borrowing.

The average amount of excess collateral from Bank of Finland counterparties declined to about 15% (-5%). Excess collateral represents the proportion of the value of the collateral deposited with the Bank of Finland which is in excess of the outstanding amount of credit.

Credit claims and covered bank bonds were the most common collateral classes

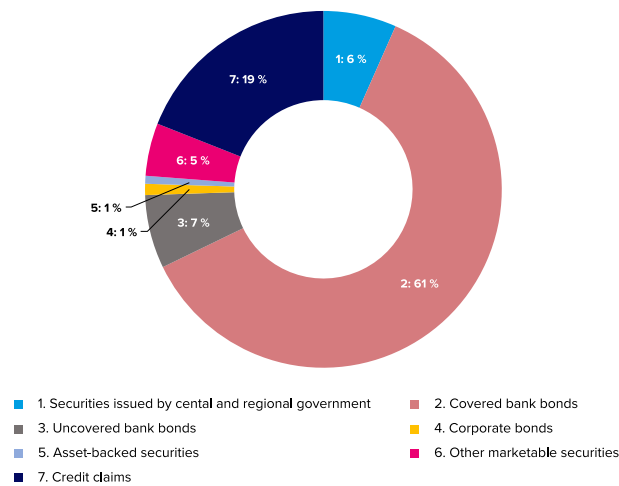
The composition of the collateral deposited with the Eurosystem remained largely unchanged in terms of asset classes in 2022.

Credit claims remained the most common form of asset used as collateral in the Eurosystem (33% of all collateral). The next most popular asset class was covered bank bonds (25%), and third was asset-backed securities (15%).

Covered bonds issued by banks were especially common as collateral among the Bank of Finland's counterparties (Chart 11). Their share of all collateral deposited with the Bank of Finland continued to grow, reaching 61% (+8%). The second most common form of collateral was credit claims (19%), although their share did slightly decrease (-4%) from the previous year. Uncovered bank bonds were the third largest collateral component (7%).

Chart 11.

**Collateral deposited with the Bank of Finland
(average shares in 2022)**



Source: Bank of Finland.



Net asset purchases under monetary policy purchase programmes ended in 2022

In 2022, the Eurosystem's asset purchase programmes entered a reinvestment phase, with flexibility applied to ensure the smooth transmission of monetary policy across the euro area. Climate performance was added as a criterion in corporate bond purchases.

In line with the monetary policy objectives of the European Central Bank (ECB), the Bank of Finland purchases Finnish public sector debt securities, Finnish covered bonds and a broad range of corporate bonds. One of the goals is to reduce the environmental footprint of the Eurosystem's corporate bond purchases and support the attainment of the goals of the Paris Agreement.

The Bank of Finland itself bears the risk in public sector securities purchases, but the risks in the private sector purchase programmes are shared among the Eurosystem's central banks.

Flexibility and a new instrument enhanced the smooth transmission of monetary policy across the euro area

The ECB ended its net purchases of securities under the [pandemic emergency purchase programme \(PEPP\)](#) at the end of March and under the [asset purchase programme \(APP\)](#) at the start of July.

In the subsequent reinvestment phase, principal payments from maturing securities are reinvested into the market.

PEPP reinvestments can be adjusted flexibly across time, asset classes and jurisdictions at any time to ensure the smooth transmission of monetary policy.

At its meeting in July, the Governing Council of the ECB approved the Transmission Protection Instrument (TPI), a new monetary policy tool to prevent interest rate spreads from widening.

In 2022, the Eurosystem's holdings of assets purchased under the APP increased from EUR 3.123 trillion to EUR 3.254 trillion. The ECB publishes the Eurosystem's PEPP holdings every two months. At the end of November 2022, they amounted to about EUR 1.683 trillion, an increase of EUR 147 billion compared with a year earlier.

APP and PEPP holdings on the Bank of Finland balance sheet in 2022

[In 2022, holdings of monetary policy-related securities on the Bank of Finland's balance sheet](#) increased from EUR 90 billion to EUR 96 billion. Of this total, securities purchased under the APP amounted to EUR 68 billion, and under the PEPP to EUR 28 billion.

At the end of 2022, the amount of Finnish government bonds and government-related bonds purchased under the APP on the Bank of Finland's balance sheet totalled EUR 37.3 billion, and bonds issued by European supranational institutions amounted to EUR 2.1 billion.

Securities purchased under the PEPP are reported as a single figure on the balance sheet. The Bank of Finland's PEPP purchases consist mainly of public sector debt securities, but they also include corporate and covered bonds.

Holdings of Finnish central government bonds are published by Statistics Finland on a quarterly basis in the national financial accounts. [At the end of September 2022, the Bank of Finland held 38.7% of the total stock of Finnish central government bonds.](#)

At the end of 2022, the amount of corporate bonds purchased under the APP on the Bank of Finland's balance sheet totalled EUR 16.5 billion, and covered bonds issued by banks amounted to EUR 11.7 billion.

In corporate securities purchases under the APP and the PEPP, the Bank of Finland acts as one of the Eurosystem's six central banks conducting purchases on behalf of the entire Eurosystem.

Besides Finnish corporate bonds, the Bank of Finland is also responsible for purchasing Austrian, Estonian, Irish, Latvian and Lithuanian corporate bonds that meet the eligibility criteria of the purchase programmes.

In covered bonds, the Bank of Finland's purchases focus on the Finnish covered bond market.

[The Eurosystem makes the securities it has acquired under its asset purchase programmes available for securities lending, as appropriate.](#) The aim of [securities lending](#) is to support the liquidity of euro area bonds.

ECB incorporated climate change considerations into corporate sector purchase programme in 2022

The ECB announced on 4 July 2022 the incorporation of climate change considerations into the Eurosystem's purchases of corporate sector securities, encompassing both the corporate sector purchase programme (CSPP) and the PEPP.

As of October 2022, the ECB has included climate performance criteria in its corporate bond purchases. The aim is to gradually decarbonise the Eurosystem's corporate bond holdings on a path aligned with the goals of the Paris Agreement.

To this end, the Eurosystem is tilting its reinvestments of corporate bonds towards issuers with a better climate performance. Performance is measured by calculating a specific climate score for each issuer.

[Detailed information on the climate measures applied to the purchase programmes can be found on the ECB's website.](#) These climate measures will be pursued without prejudice to the Eurosystem's primary objective of maintaining price stability.

In addition, the Eurosystem has adopted a differentiated bidding approach in the primary market which favours issuers with higher climate scores as well as green bonds that meet certain criteria.



The Bank of Finland, as part of the Eurosystem, selects for securities reinvestment purposes issuers whose business is sustainable from the climate perspective.



Financial stability

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Financial stability

The Bank of Finland contributes to maintaining financial stability in Finland. It assesses risks to the financial system, compiles financial statistics and prepares macroprudential policy. Risks to financial stability increased in 2022 as a result of the energy crisis triggered by Russia's war in Ukraine.

In 2022, the energy crisis posed a challenge to financial stability throughout Europe. Sharp fluctuations in the financial markets heightened interest in statistical data on the economy.

Bank of Finland renewed its statistics production in 2022 to provide more detailed information on financial markets

Compiling appropriate, up-to-date and comprehensive statistics is one of the statutory tasks of the Bank of Finland.

The Bank of Finland revised and harmonised its approach to compiling statistics on insurance and securities in 2022 to better correspond with the other statistics it compiles.

The collection of payment and fraud data was also revised in line with the Regulation of the European Central Bank (ECB) on payment statistics.

Risks to financial stability increased in 2022

Russia's war in Ukraine and the energy crisis triggered by it in Europe posed a challenge to the Finnish economy and financial system in 2022.

Inflation rose, the economic outlook weakened and financing became more expensive. Growth in unavoidable expenses squeezed the finances of many households and businesses.

Financial stability risks were increased by the higher levels of household debt, for example.

Financial stability was also shaken by the increase in energy companies' financing needs and liquidity challenges. The Bank of Finland considers it important to support liquidity in order to avoid extensive liquidity problems that would undermine financial stability.

Macroprudential policy strengthens financial system's resilience

The purpose of macroprudential policy is to manage financial stability, the risk of financial crises and the resilience of the financial system. Macroprudential policy also ensures the capital adequacy of banks.

As a result of regulatory changes made earlier in Finland, the banks' capital buffers were strong at the outbreak of Russia's war in Ukraine and when the energy crisis began. The banks were therefore more resilient to the weaker economic outlook and were able to continue to intermediate finance to the real economy.

In 2022, the Bank of Finland contributed to the further development of macroprudential policy by updating risk indicators and producing research data for legislative reform purposes, for example.

The International Monetary Fund (IMF) completed an extensive assessment of Finland's financial system stability and risks in 2022. Based on the assessment, the IMF then issues macroprudential policy recommendations on, for example, improvements to legislation, caps on borrowing and the development of recommendations and regulation.

Bank of Finland continued in 2022 to examine the impact of climate change on the financial system

In 2022, cyber risks and the geopolitical environment became increasingly important in the contingency preparations for possible financial system crises.

Climate change causes risks to the financial sector too, for example by putting collateral at risk and endangering debtors' solvency. These risks are assessed and efforts made to mitigate them by increasing the sustainability of the financial system.

In 2022, the Bank of Finland continued its risk analysis of the structural changes in the economy associated with climate change and the green transition, and developed the analysis work further to better correspond with the changing conditions.



Risks to financial stability increased in 2022

The risks to financial stability increased in 2022. The energy crisis pushed up costs for households and companies, the economy weakened and interest rates on loans rose rapidly. Borrowers' repayment capacity nevertheless remained mostly good.

The Bank of Finland regularly assesses the stability of the financial system and the risks and vulnerabilities which threaten that stability. Such assessments support the work and decision-making of the Bank of Finland Board and the Board of the Financial Supervisory Authority (FIN-FSA).

If risks to, for example, lending and debt accumulation materialise extensively, this could jeopardise financial stability and have adverse effects on banks and the economy for a long period of time. Work done at the Bank of Finland helps to identify in a timely manner risks to financial stability, and to find ways to mitigate and prevent them.

Finnish financial system remained stable

Russia's war in Ukraine and the energy crisis triggered by it in Europe posed a challenge to the Finnish economy and financial system in 2022. [Finland's financial system nevertheless remained stable](#), according to the Bank of Finland's assessment.

Longer term risks to financial stability increased during the year, however, both in Finland and around the world.

Inflation rose, the economic outlook weakened and financing from banks and from the market became more expensive. Growth in unavoidable expenses squeezed the finances of many households and businesses.

The financial system's key vulnerabilities in Finland relate to the record high level of household debt. The risks are also increased by the banking sector's size, concentration and international linkages.

Chart 12.



Russian's invasion of Ukraine increases risks

- Economic growth will fade, prices rise and loans become more expensive
- Rising costs will tighten borrowers' finances
- Banks may experience increased loan losses

Source: Bank of Finland.



The risks necessitate buffers for a rainy day

- Excessive household debt must be reined in
- Banks' capacity to withstand crises must be improved
- Banks must prepare carefully for cyber risks

Finnish banks have a good capacity to bear credit risks

The Bank of Finland and the FIN-FSA jointly carried out a [stress test](#) on the Finnish banking sector in 2022.

The stress test involved a hypothetical crisis scenario in which the economies and housing markets of the Nordic countries were shaken by disruptions in the international economy and financial markets.

Based on the outcome of the stress test, the Finnish banking sector could successfully withstand the disruptions outlined in the scenario. Credit losses would increase notably, but the banking sector's capital position would remain sound.

However, based on the Bank of Finland's assessment, the [resilience of banks and borrowers should be strengthened](#) to ensure the stability of the financial system in disruptions and crisis situations of different kinds in the future, too.

For example, banks should take more determined action to prepare for financial sector cyber risks. In addition, authorities need more effective measures for curbing excessive household indebtedness.

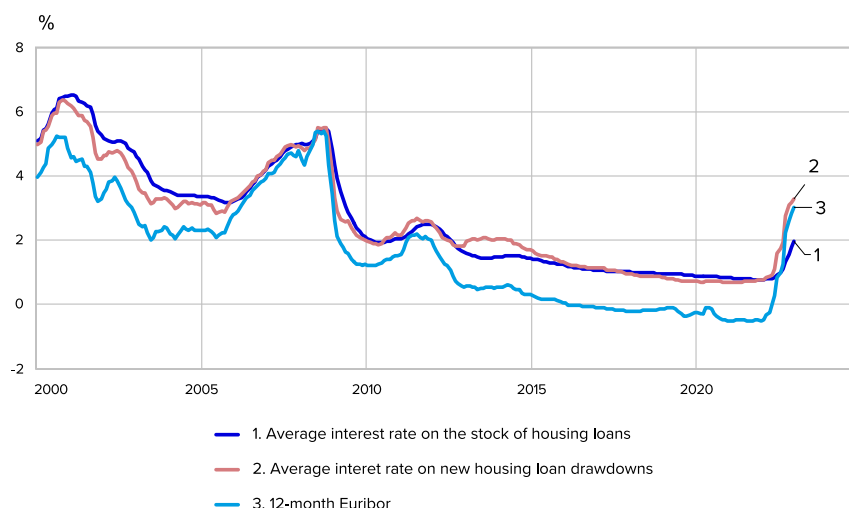
Interest rates on loans rose rapidly

[Interest rates on new loans to households and businesses rose rapidly in the second half of 2022](#) (Chart 13). The majority of loans in Finland are tied to Euribor rates, which already entered positive territory in the spring and rose rapidly after that.

Some mortgage borrowers have a fixed rate loan or a loan with interest rate hedging. Over time, the rise in market interest rates will nevertheless also pass through to the interest rates on most existing loans.

Chart 13.

Interest rates on housing loans rose rapidly in Finland in 2022



Sources: Bank of Finland and Refinitiv.

The Bank of Finland estimated [the impact of rising interest rates on new mortgage borrowers](#). The calculations were based on data collected from the banks on new mortgages and on mortgage borrowers' income.

Rising interest rates have the greatest impact on borrowers who have a large variable rate loan in relation to their income and whose loan-servicing burden is already substantial.

Energy crisis increased corporate borrowing

The Bank of Finland estimated the [impacts of Russia's war in Ukraine, and of the consequences of it, on Finnish companies](#). The direct impacts were initially felt by companies that had operations in or trade with Russia.

The indirect impacts on companies in Finland and in other European countries are, however, significantly more extensive due to, for example, higher prices of energy and raw materials and availability problems.

In 2022, the volume of new loans taken out by companies was exceptionally large. This was due especially to the [financing needs of energy and manufacturing companies](#). Electricity-generating companies needed more financing due to the increase in the amount of collateral that they were having to submit to the [energy derivatives exchange](#).

Housing market slowed towards the end of the year

In 2022, the Bank of Finland paid particular attention to housing market and property investment risks both in Finland and Nordic countries in the other. Housing transactions and mortgage lending slowed towards the end of the year, and housing prices declined.

In early 2022, Finland and certain other countries received an assessment from the European Systemic Risk Board (ESRB) concerning risks in the residential real estate market and the policy responses introduced by national authorities for mitigating the risks. The ESRB oversees and promotes the stability of the financial system in Europe.

The ESRB assessed that risks in the European residential real estate market have increased further, and that Finland and certain other countries should therefore continue to develop their [macroprudential](#) tools and related legislation.

Consumer lending increasingly digital

The Bank of Finland also monitored and closely analysed consumer lending by credit institutions and other financial institutions.

In 2022, the use of overdrafts and credit card credit in particular increased as the COVID-19 pandemic subsided and consumers had more opportunities to purchase services.

The volume of consumer credit and the number of lenders granting consumer credit has grown in recent years. Credit can be sought via various online services, in a fully digital form.

According to a Bank of Finland survey, digital channels are used most commonly in the sale of unsecured consumer credit.

Uncertainty in international markets

The Bank of Finland also regularly assesses [the stability and risks of the international financial system and their impacts on Finland](#).

In 2022, uncertainty on the international financial markets was high, due to the energy crisis, soaring inflation, the weak economy and rising financing costs.

These factors increased concerns over the financial position of households, businesses and governments and their ability to repay their debts. However, the growth in credit risks was contained for the time being. The ability of banks to provide credit remained good in the major economies, which is important for the real economy.

The most acute risks related to the weakening of liquidity in the financial markets, particularly towards the end of the year. Investors' appetite for risk taking and trading on the international securities markets diminished.

The markets occasionally witnessed a shortage of high-quality collateral, and bond issuances by high-risk companies, for example, decreased significantly from previous years.

The Bank of Finland also noted the risks to financial stability caused by climate change and biodiversity loss. For instance, investments in the reduction of carbon dioxide emissions also require major financing.



Financial stability shaken by liquidity challenges in energy derivatives markets

In autumn 2022, the collateral requirements for energy derivatives increased energy companies' short-term financing needs substantially. The Bank of Finland monitored the situation and assessed the financial stability risks related to energy derivatives markets.

Strong volatility in the prices of gas and electricity caused significant challenges for energy companies' liquidity, i.e. their ability to meet their payment obligations. The growing collateral requirements in the derivatives markets also increased energy companies' short-term financing needs.

The Bank of Finland considers it important to support this need for liquidity so as to avoid extensive liquidity problems that would undermine financial stability.

Collateral decreases the counterparty risk in derivatives transactions

Energy companies use derivatives, such as futures, to hedge their future profits against movements in the market price of energy. For example, an electricity producer can enter into a futures contract whereby it undertakes to sell electricity at a predetermined price in the future. The buyer of the electricity futures contract, in turn, undertakes to purchase electricity in the future at the fixed price.

Derivatives transactions are subject to counterparty risk, i.e. the risk that the other party to the derivatives contract is unable to fulfil its obligations. In order to manage counterparty risk, derivatives contracts are often subject to collateral requirements.

For example, the seller of an electricity futures contract may have to place additional collateral when the market price of electricity rises. If the seller is unable to supply the electricity it has promised, the collateral is transferred to the buyer who can then purchase electricity at the prevailing market price.

A significant share of derivatives transactions are conducted via central counterparties. As the term suggests, a central counterparty interposes itself between the so-called clearing members, becoming the buyer to every seller and the seller to every buyer. The task of the central counterparty is to manage counterparty risk by, for example, collecting collateral and maintaining a default fund.

Energy crisis increased collateral requirements to record high levels

In 2022, the collateral requirements of energy derivatives contracts cleared by central counterparties increased to record high levels due to the exceptionally strong volatility in electricity and gas prices as a result of the energy crisis. The situation escalated particularly in late August and early September when energy futures prices reached new highs.

The high collateral requirements strongly increased the short-term financing needs of electricity companies engaged in derivatives trading.

In early September, it was feared that financing needs would expand so much that they could create liquidity problems for energy companies engaged in derivatives trading.

Many countries, including Sweden and Finland, offered liquidity support in the form of loan and guarantee programmes to the companies engaged in derivatives trading. The Bank of Finland considered the support measures to be important, as they helped prevent extensive liquidity problems for energy companies, which could have undermined financial stability more extensively.

Energy derivatives markets could undermine financial stability as a whole

Energy derivatives markets could threaten financial stability if the liquidity problems of one or more companies engaged in derivatives trading spread to other parts of the financial system.

Problems could spread if, for example, a default by one of the central counterparty's clearing members causes losses, and subsequently liquidity problems, for other clearing members.

In derivatives trades that have undergone central counterparty clearing, a default by one clearing member will trigger a default procedure.

The larger the losses caused by the default of the clearing member, the higher the likelihood that the collateral and additional collateral placed are insufficient for covering the losses. In this case, the other clearing members will have to participate in covering the losses.

Bank of Finland assessed possible financial stability risks in energy derivatives markets

In autumn 2022, the Bank of Finland analysed the potential effects on the banking sector, in particular, of contagion from the energy derivatives markets.

The spreading of problems to the banking sector would be highly risky for various reasons. These reasons include the domestic banking sector being large relative to the size of the economy. [The domestic banking sector plays a major role in channelling funds to the real economy.](#)

Domestic banks do not themselves operate in the Nordic energy derivatives markets. The risks to the domestic banking sector from a default by one or more participants in the energy derivatives markets are therefore indirect.

Numerous Nordic energy companies are engaged in trading in Nordic energy derivatives markets. In centrally cleared energy derivatives markets, a default by one or more energy companies could cause losses to other energy companies engaged in derivatives trading.

Extensive liquidity problems in the energy industry would, in turn, increase the credit risks for banks that have provided financing for the energy companies. The Bank of Finland thus assessed, in the course of the autumn, domestic banks' claims on energy companies and lending to the energy industry.

Turbulence has calmed down for now but monitoring continues

The situation in the energy derivatives markets calmed down in September as futures prices levelled off and public support measures alleviated immediate fears of default. However, the root cause of the problems – the energy crisis – has not yet receded.

The Bank of Finland continues to monitor collateral requirements, market indicators and banks' exposures to the energy sector.

The Bank also monitors developments in the international regulatory environment for energy derivatives markets and assesses regulatory proposals from the perspective of financial stability.



Macroprudential policy strengthens financial stability

International cooperation and the management of climate change, geopolitical change and cyber risks are essential to the conduct of macroprudential policy. The Bank of Finland has drawn attention particularly to the adverse effects of excessive indebtedness on households and for financial stability. The risk indicators used for assessing the financial market are essential for enabling the Bank of Finland to fulfil its macroprudential role.

Macroprudential policy refers to measures that promote the stability of the financial system as a whole, reduce the risk of financial crises and strengthen the financial system's resilience.

Macroprudential policy complements financial supervision, the primary objective of which is to ensure the stability of individual financial institutions and the financial market infrastructure.

The ultimate goal of macroprudential policy is to ensure the reliability and availability of financial services to households, private entities and the public sector.

The Bank of Finland participates actively in macroprudential policy preparation through support for the Board of the Financial Supervisory Authority (FIN-FSA) by providing it with analyses, recommendations for action, and by submitting opinions on planned macroprudential decisions.

In addition, the Bank of Finland reports to stakeholders on the financial market situation, assesses policy impacts and the impacts of decisions, and participates in the development of macroprudential policy.

Macroprudential policy ensured capital adequacy of banks

In Finland, decisions on macroprudential measures are taken by the FIN-FSA Board, which is chaired by **Marja Nykänen**. Nykänen has served as Bank of Finland Deputy Governor since 2018.

The FIN-FSA Board, as a rule, takes macroprudential decisions on a quarterly basis.

Due to regulatory changes previously implemented, Finnish banks had strong capital buffers at the outbreak of Russia's war in Ukraine. This supported households' and companies' access to credit even though a new crisis emerged while the COVID-19 pandemic was still ongoing.

As the war was followed by an energy crisis and risk of recession, the banks made use of the capital buffers accumulated earlier to maintain their resilience to the weaker economic outlook and their ability to intermediate finance to the real economy.

Bank of Finland supported the decisions of the FIN-FSA Board

The FIN-FSA Board kept the countercyclical capital buffer (CCyB) rate at 0% throughout 2022. The CCyB requirement is higher than the other capital requirements and it targets cyclical stability risks. The CCyB rate was kept at 0% because there were no signs of overheating in the credit market.

Due to the consequences of Russia's war in Ukraine, a systemic risk buffer (SyRB) requirement was not imposed on credit institutions even though it was considered that the structural systemic risks would have provided justification for setting the requirement.

In June, the FIN-FSA Board decided to raise the additional capital requirements of two systemically important credit institutions (O-SII buffers). The adjusted requirements entered into force at the beginning of 2023. The maximum loan-to-collateral (LTC) ratio, i.e. the loan cap, was kept at the pre-pandemic level, at which it had been set by a decision taken in June 2021. As a result, the maximum amount of residential mortgage loans granted to other than first-home buyers is 85%, and to first-home buyers 95%, of the collateral.

Furthermore, the FIN-FSA Board issued a recommendation on a maximum debt-servicing burden for mortgage applicants' loans and charges for common capital expenditures of housing company loans. According to the recommendation, the 'stressed' debt-service-to-income (DSTI) ratio of a prospective borrower should, as a rule, be no more than 60% of their net income. The stressed DSTI ratio should be calculated by taking extensively into account the applicant's housing loans, other loans and all housing-related expenses. .

The Bank of Finland supported the above-mentioned decisions taken by the FIN-FSA Board.

Work continues on the development of macroprudential regulation

The Bank of Finland supports the development of macroprudential instruments, and for a long time now it has drawn attention to the adverse effects of excessive indebtedness on households and financial stability. It considers that the instruments should more effectively tackle risks and vulnerabilities in the financial system, including the non-banking sector, and enable equitable competition in the financial sector throughout the EU.

The development, maintenance and monitoring of risk indicators used for assessing the financial market are a key part of the Bank of Finland's macroprudential role. Guidance on, for example, the indicators for setting countercyclical capital buffer rates is given in European Systemic Risk Board (ESRB) recommendation [ESRB/2014/1](#).

In Finland, [the risk indicators were partially renewed in 2022](#) because new research had suggested that some of the indicators ought to be amended. Other reasons were related to the ESRB's recommendations and particular issues with the up-to-dateness of the data. [Information on the risk indicators is published regularly on the Bank of Finland website.](#)

Bank of Finland participated in legislative reform

The legislative reform on preventing excessive debt accumulation by households, which had been several years in preparation, resulted in a [government proposal \(in Finnish\)](#) to Parliament in 2022.

The Bank of Finland had been involved at all stages of the preparation and had submitted its opinion to the Ministry of Finance on the draft bill in March 2022. The draft bill included proposals welcomed by the Bank of Finland, but the Bank considered the draft insufficient as it did not include a debt-to-income cap, which the Bank would be in favour of. [Parliament adopted the new law in January 2023 \(in Finnish\).](#)

The Act on the Positive Credit Register (739/2022), which was long in the making, entered into force on 1 August 2022. The Bank of Finland participated in the preparatory work for this piece of legislation, too. Data on credit granted to private individuals by banks, credit institutions, finance companies and instant loan providers will in future be reported comprehensively for entry into the register.

The extensive use of the register will start in 2024. The Bank of Finland will use the register in its financial stability analyses.

Macroprudential management also encompasses international cooperation, cyber risks and the challenges posed by climate change

International cooperation on promoting financial stability continued in 2022. The Bank of Finland participated in the work of many committees and working groups, for example at the European Central Bank (ECB), [the European Systemic Risk Board \(ESRB\)](#), the OECD and within the context of Nordic-Baltic cooperation.

The Eurosystem and the ESRB are key international cooperation forums for the Bank of Finland.

The Bank of Finland is participating in the work to extend the macroprudential toolkit to non-banks, particularly to funds and the insurance sector.

Climate change brings risks to the financial industry by, for example, putting collateral at risk, endangering debtors' solvency and increasing risks to non-life insurance companies. These risks are assessed and efforts made to mitigate them by increasing the sustainability of the financial system.

In 2022, cyber risks and the geopolitical environment became increasingly important in the contingency preparations for possible financial system crises.

The Finnish authorities responsible for financial stability, i.e. the Financial Stability Authority, the Financial Supervisory Authority, the Ministry of Finance and the Bank of Finland, have in recent years developed and refined their cooperation and division of tasks for crisis situations.

Since February 2022, cooperation between the authorities has intensified further and has involved, among other things, preparations for safeguarding everyday payments under all circumstances.

Strengthening the banking system and developing the capital markets union are increasingly important

The EU-wide banking union, which includes all the euro area countries, has a Single Supervisory Mechanism and a Single Resolution Mechanism. The banking union is still incomplete, because the common European Deposit Insurance Scheme (EDIS) has not yet been introduced. Instead, EU countries have in place national deposit guarantee arrangements.

The purpose of deposit protection is to protect depositors' funds if a bank becomes insolvent. National deposit protection may, however, be problematic as banking becomes increasingly international.

The development of capital markets would help diversify Europe's bank-centric financial system. In particular, it would improve companies' access to finance and would diversify risks. Diversification of the markets for green finance by further developing the capital markets would, in turn, help achieve the EU's climate targets.



IMF conducted a thorough assessment of Finland's financial system

The International Monetary Fund's (IMF) extensive assessment of Finland's financial system reviewed areas such as banking supervision, macroprudential policy and the ability to identify various risks to the financial system and to manage crises.

The IMF conducts a financial system stability assessment on a regular basis under the Financial Sector Assessment Program (FSAP) for countries and regions it has deemed to have a systemically important financial sector. For Finland, the assessment is mandatory once every five years.

The assessment involves the IMF conducting a comprehensive review of the financial stability and risks of the country in question. According to this latest assessment completed by the IMF, Finland's financial system is stable, but risks to financial stability emanate from several factors, including the presence of a large and concentrated banking sector that is strongly interconnected with other financial systems in the Nordic region. The IMF also considers the high level of household indebtedness, which rose further during the COVID-19 pandemic, a risk that makes borrowers vulnerable to the negative impacts of rising interest rates.

The IMF also submitted to the Finnish authorities a comprehensive list of areas in which improvements could be made. The assessment serves as an input for the IMF's Article IV Consultation, in which it assesses Finland's economy and its structures more extensively.

Wide-ranging assessment required input from financial stability authorities

Finland's FSAP process started in autumn 2021 and was completed in early 2023. The Bank of Finland was responsible for the coordination and arrangements related to the assessment process.

The process included three visits, two of which had to be arranged in virtual form due to the COVID-19 pandemic. In addition, the Finnish authorities involved, i.e. the Bank of Finland, the Financial Supervisory Authority, the Financial Stability Authority and the Ministry of Finance, responded to various IMF information requests, surveys and self-assessments.

Finland's FSAP assessment consists of five parallel work streams defined by the IMF:

- 1) banking supervision and regulation of small and medium-sized institutions, i.e. LSI banks (less significant institution)
- 2) macroprudential policy
- 3) stress test exercises and systemic risk analysis
- 4) non-bank financial system, particularly pension insurance sector
- 5) crisis management and resolution.

Financial technology (fintech) and financial sector cyber resilience were discussed as part of the work stream on banking supervision, and climate risks and sustainability issues were discussed in the work streams on banking supervision and the pension insurance sector.

In connection with online inspections and the mission to Helsinki, IMF staff had a total of about 170 meetings with various authorities, banks, pension insurers, insurance companies, trustees, asset managers and financial intermediaries.

[The main mission in the context of the FSAP process](#), with six members of IMF staff, took place in September 2022 in Helsinki. At the same time, two IMF experts conducted a systemic risk analysis and stress testing exercises in the premises of the European Central Bank (ECB) in Frankfurt.

The Executive Board of the IMF discussed Finland's FSAP assessment in January 2023, after which the [IMF published its assessment and recommendations on Finland's financial system](#).

IMF's FSAP assessment identified progress but also risks

According to the IMF, Finland has improved the regulation and supervision of its financial sector since the 2016 FSAP assessment. Progress has been achieved particularly in the cooperation with Nordic and Baltic authorities, in the introduction of a systemic risk buffer (SyRB) in macroprudential legislation, and in preparations to establish a positive credit register.

Risks to Finland's financial stability emanate from a large and concentrated banking sector with tight interconnections in the Nordic region. The IMF also considers high household indebtedness a significant risk.

In the non-bank financial system, pension insurance companies have a significant role, and the IMF considers their investment behaviour to be procyclical.

The stress tests conducted by the IMF indicated that the Finnish banking system's solvency provides resilience to even severe macro-financial shocks. However, Finland's banking system remains vulnerable to liquidity shocks due to its reliance on short-term wholesale funding. According to the IMF, banks' access to funding may deteriorate significantly in a possible crisis situation.

The banking sector interconnectedness analysis revealed a significant risk that due to financial system interconnectedness, any problems in the other Nordic countries could spill over to Finland – and vice versa.

The IMF's assessment of the stability and risks of Finland's financial system is broadly consistent with previous assessments by the Bank of Finland.

IMF submitted a comprehensive list of recommendations to Finnish authorities

Based on the FSAP assessment, the IMF issued to Finnish authorities a number of recommendations that focus on, for example, governance and resourcing for supervision and regulation, enhancing the macroprudential toolkit, regulation in the pension insurance sector, the operationalization of crisis management arrangements, and AML/CFT supervision (anti-money laundering/combating the financing of terrorism).

In terms of the Bank of Finland's tasks, the key recommendations relate to macroprudential policy. The IMF considers that the macroprudential toolkit should be expanded to include caps on debt-to-income (DTI) or debt-service-to-income (DSTI) ratios.

In addition, the IMF recommends that the FIN-FSA Board should be provided with hard powers to issue regulations on macroprudential policy and/or semihard powers to issue macroprudential policy recommendations on a comply or explain basis.

According to the IMF, the authorities should also consider introducing a positive rate for the countercyclical capital buffer (CCyB) in the standard risk environment. Moreover, the monitoring of systemic risk should be enhanced by, for example, addressing existing data gaps and strengthening the disaggregated data analysis.



Bank of Finland analysed climate change impacts on financial system

Climate change and structural changes in the economy associated with the green transition require careful risk analysis. In 2022, the Bank of Finland also paid greater attention to biodiversity loss and its prevention.

Climate change and extreme weather events present risks for banks and other financial sector companies. The transition to greener technology can also bring risks if borrowers' fossil energy-based investments are unused.

The financial markets have an important role to play in tackling climate change, because the transition to carbon neutrality requires large investments that need to be financed.

The potential risks to financial sector entities from climate change and climate policy are assessed by central banks and supervisory authorities.

Green transition requires the support of a functioning financial system

Imports of fossil fuels from Russia decreased substantially in 2022 following the outbreak of its war in Ukraine, and there is an obvious need to decrease dependency on these fuels both in Finland and in the other EU countries.

In summer 2022, Europe again experienced record heatwaves and drought, which also pushed climate risks higher up the agenda.

The Bank of Finland, under the direction of Deputy Governor **Marja Nykänen**, participated in the working group on financing the green transition set up by the Ministry of Finance, the Ministry of the Environment and the Ministry of Economic Affairs and Employment.

The working group drew up proposals for financing measures to accelerate the transition in an economically, ecologically and socially sustainable manner. Only a stable and well-functioning financial system will be able to provide the financing required by a long-term green transition. [In December, the working group published its report on financing the green transition.](#)

Energy supply is the most significant industry with transition risks

The Bank of Finland continued in 2022 to examine the impact of climate change on the financial system.

It analysed Finnish banks' transition risks by examining the composition of their credit portfolios and claims on corporate sectors. In terms of transition risk, the most significant industry is energy supply. In this industry too, the risks in Finland are moderate and smaller than in many other countries. The results of the analysis were discussed in the Bank of Finland Bulletin article [Climate change must be tackled – What does PACTA tell us about banks' transition risks? \(in Finnish\)](#).

In 2022, the Bank of Finland also started to pay greater attention to biodiversity loss and its prevention. This is more difficult to measure and analyse than climate change, and central banks have previously paid relatively little attention to it. [An article on biodiversity loss \(in Finnish\)](#) was published in the Bank of Finland Bulletin in November.

Central banks also continued to cooperate internationally on climate risks

The Bank of Finland is a member of the Network for Greening the Financial System (NGFS), which published new [climate scenarios](#) in September 2022.

The scenarios provide an illustration of climate change and its implications in the decades ahead. The new scenarios take into account new technologies and reflect the most recent country-level commitments to reach net-zero emissions.

The modelling of physical risks caused by heatwaves, drought, storms, excessive rainfall and other extreme weather events has been improved compared to the scenarios published in June 2021. The models can be used, for example, for assessing the impact of the materialisation of climate risks on the financial system.

The monitoring of climate risks in the financial sector requires new types of statistics and other numerical data. The Bank of Finland was actively engaged in 2022 in the work on global and comparable climate data, for example within the NGFS working group assessing data needs and data availability.

In July, the working group published a [final report](#) and a [directory of climate change-related indicators](#). The Bank of Finland also actively promoted the development of climate indicators in the work of the Statistics Committee of the European System of Central Banks (ESCB).

The European Central Bank and the European Systemic Risk Board published a joint report in July [on the options for a macroprudential policy response to the management of climate risks](#). The Bank of Finland also participated in the preparation of this report. Work on macroprudential policy and climate risks continues in the Eurosystem.



Within the Network for Greening the Financial System (NGFS), the Bank of Finland promoted the production of global and comparable climate data.



Revised statistics compilation provides improved data on financial markets

The sharp fluctuations in the financial markets in 2022 heightened interest in the statistical data produced by the Bank of Finland. The Bank harmonised its approach to compiling statistics on insurance and securities and launched a new process for collecting payment and fraud data. As part of the European System of Central Banks, the Bank took an active role in the collaborative work within the statistics sector. This work focused on preparations for the Integrated Reporting Framework (IReF) and climate indicators in the financial sector.

Compiling statistics is one of the statutory tasks of the Bank of Finland. The Bank meets the information needs of users by actively developing the collection and compilation of statistics and by ensuring that they are up to date, relevant and comprehensive, even in a changing operational environment.

In 2022, users of the statistics produced by the Bank of Finland were particularly interested in the dynamics of the financial markets. Companies in the manufacturing and energy sectors, in particular, were in urgent need of financing on a massive scale, and they took out more new loans than before. After a busy start to 2022, the housing and mortgage markets quietened down towards the end of the year. Households' financing costs grew with the rise in interest rates, although the statistics suggest that mortgage-related difficulties for the banks were only slight.

Bank of Finland harmonised its processes for compiling statistics on insurance institutions and securities

Every quarter, the Bank of Finland compiles [statistics on insurance institutions](#) from Solvency II data for the European Central Bank (ECB) and also provides data to Statistics Finland concerning the national [financial accounts](#) and [the balance of payments](#).

In 2022, the Bank of Finland undertook an IT project to modify the process for compiling data on insurance institutions so as to harmonise it with the procedures for other statistics compiled by the Bank. The new process makes use of the previous statistical systems and replaces the separate tool that was used in compiling statistics on insurance institutions.

Additionally, the Bank ended the use of a separate [questionnaire on securities-based assets and liabilities](#) for insurance institutions, which will reduce the reporting burden for those concerned.

Bank of Finland launched a new process for collecting payment and fraud data

In 2022, the Bank of Finland launched a new process for collecting payment and fraud data. This involves a reporting obligation, which applies to Finnish credit and payment institutions, the branches of similar foreign institutions in Finland, and registered entities providing payment services without a licence.

The reporting obligation is based on an ECB Regulation ([ECB/2013/43](#), amended by [ECB/2020/59](#)).

The collection of payment and fraud data replaces the previous annual collection of data on payment transactions.

The reporting frequency was increased to every quarter and half-year, and certain aspects of the Financial Supervisory Authority's reporting were integrated with the data collection process. The data collected now are largely based on the ECB Regulation on payments statistics, although they also cater for other national needs for information.

The aim of the data collection is to obtain a more comprehensive picture of retail payments at home and abroad and permit deeper analysis of the use of payment instruments, arrangements and channels.

ECB is standardising statistical data collection for euro area banks

The Bank of Finland took an active role during the year in the [Integrated Reporting Framework \(IReF\) launched by the ECB's Governing Council in December 2021](#).

The purpose of the project is to integrate and harmonise the collection of statistical data by banks in the euro area, thus reducing the statistical reporting burden for those banks.

The results of the cost-benefit survey of banks by the ECB in spring 2021 have been published [in respect of national requirements](#) and [technical](#) implementation. At the same time a supplementary survey to be carried out in spring 2023 has been prepared.

The drafting of an IReF regulation and the specification of system requirements will begin during 2023. The provisional timetable for the start of reporting under the new framework is early 2027.

Bank of Finland involved in international development of climate statistics compilation

The lack of statistics on climate in the financial sector and comparable data on the subject have for a long time hampered the assessment of the risks associated with climate change and the financing of the climate transition.

In 2022, the Bank of Finland was actively involved in the development work on financial sector climate statistics and particularly the data foundation for this, through the NGFS climate network of central banks and financial supervisors (Network for Greening the Financial System).

The Bank of Finland was also active in furthering the work of the Statistics Committee of the European System of Central Banks (ESCB) to improve climate statistics in the financial sector. A team of specialists used new techniques to produce methods for establishing and testing indicators. The indicators were developed to describe the physical and transition risks to the financial sector.

The ECB's Governing Council considered the team's report in November 2022, and the indicators were published in early 2023. The section of this Annual Report entitled 'Macprudential policy strengthens financial stability' provides more in-depth information on the Bank of Finland's work in the areas of climate risks and green financing.



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Money and payments

27.4.2023

One of the basic tasks of the Bank of Finland is to maintain the cash supply and issue banknotes in Finland. Russia's war in Ukraine increased the demand for cash in 2022. The Bank of Finland considers that securing cash services is important and will remain so in the future.

Backup systems were created in 2022 for securing daily payments in emergencies and in the event of disruptions.

These backup systems include the national emergency account system, which also allows cash withdrawals, debit card payments and credit transfers.

Development of a digital euro continued in 2022

Electronic payment is increasingly popular in Europe. Many of today's electronic payment solutions are dependent on payment service providers located outside Europe.

Work on a possible central bank digital currency – a digital euro – forms part of the careful preparatory work to meet the changes in the operating environment brought by digitalisation. The aim of a digital euro would be to strengthen the strategic autonomy of Europe and the role of central bank money as a monetary anchor.

In 2022, a national monitoring group for the digital euro project was established in Finland, headed by the Bank of Finland and consisting of payment service providers, banking sector representatives and public authorities.

Demand for cash grew by more than expected in 2022

The outbreak of the COVID-19 pandemic in 2020 led to a decrease in the use of cash and weakened the profitability of cash services and therefore the availability of such services. Russia's war in Ukraine, in turn, increased the importance of cash in contingency preparations for a crisis.

The Bank of Finland proposed a legislative initiative in 2022 for safeguarding a sufficient level of cash services in Finland.

International cooperation and protecting financial sector services from cyber risks are important

Russia's war in Ukraine and Finland's NATO membership process have increased the threat to Finland's critical infrastructure, also in the cyber environment.

According to the National Cyber Security Centre, Finnish organisations too are being targeted directly, which underlines the importance of protection and testing as well as international cooperation.

Bank of Finland continued to develop payment systems in support of financial system stability

The Bank of Finland provides the Eurosystem's common TARGET services to Nordic financial sector entities.

In 2022, the Bank of Finland maintained the current systems and actively participated in new TARGET development projects.

The reliable functioning of TARGET systems is part of financial system stability.



Development of a digital euro continued in 2022

A central bank digital currency for the euro area – a digital euro – is currently at the investigation stage. In 2022, the Eurosystem took a range of decisions on the features of a digital euro, but various aspects still remain undecided.

Although still in the investigation phase, a digital euro in practice would mean that citizens would be able to hold central bank money in digital form, in addition to banknotes.

A digital euro would be a digital form of our single currency, the euro, accessible to all citizens. In other words, the Eurosystem would not be issuing a new currency.

In 2021, the Eurosystem launched an extensive investigation project to establish a concrete form for a digital euro. The decision on whether to issue a digital euro has not yet been taken, however.

Eurosystem aims to ensure payment systems are reliable and efficient in the future too

The task of the Eurosystem is to ensure that payment and financial systems continue to be reliable and efficient in an increasingly digitalised world.

The importance of cash as a payment instrument continued to decrease during the COVID-19 pandemic, and many of today's electronic payment solutions are dependent on entities located outside Europe.

The aim of a digital euro would therefore be to strengthen the role of the euro area's central bank money as a monetary anchor and to increase the strategic autonomy of Europe and competition in payment services within the euro area.

Possible issuance of a digital euro would still be years away

A central bank digital currency (CBDC) has in recent years become an important theme in the work of many central bank around the world.

The Eurosystem has been conducting investigative work on a CBDC since early 2020.

Dozens of experts from the European Central Bank (ECB) and from all the Eurosystem national central banks are participating in the extensive two-year investigation phase, which focuses on the design and feature options of a digital euro.

The most important decision-making body in the project is the High-Level Task Force, where the Bank of Finland is represented by Member of the Board **Tuomas Vähimäki**.

In addition to central bank experts, the project also utilises the input of other payment and payment flow experts and authorities. In Finland, the national monitoring group for the digital euro project began its work in 2022, led by the Bank of Finland.

The purpose of the group is to communicate information about progress in the digital euro project and to discuss CBDC issues.

The investigation phase will be completed in autumn 2023, after which the Governing Council of the ECB will decide on the next phase. The possible issuance of a digital euro would, in any event, still be a number of years away.

Investigation phase defines features of a digital euro

In 2022, the Eurosystem took many important decisions on the features of a digital euro.

The investigation phase has confirmed that users of a digital euro would need to be able to use it more or less like current forms of payment, i.e. for payments online, payments at point-of-sale (POS), person-to-person payments and payments for public services. In addition to online payment based on real-time data connections, the project is also seeking a technical solution for an offline payment functionality, i.e. for payments that could be made without an online connection.

The digital euro would be on the Eurosystem's balance sheet, and Eurosystem central banks would also be responsible for the settlement of online payments. The settlement of offline payments would take place in the device in which the payment was initiated.

A key concern about the issuance of a digital euro relates to the potentially large shifts from bank deposits to a digital euro and the weakening of financial stability. With this in mind, the Eurosystem is looking at constraints on the use of a digital euro, such as an upper limit on digital euro balances, and the option of using interest rates to guide people's choices. The digital euro should be a means of payment, not a form of investment.

Protection of privacy has been an important topic since the start of the project. Complete anonymity has been ruled out, however, because supervised intermediaries would have to be able to fulfil their obligations regarding AML/CFT (anti-money laundering and combating the financing of terrorism). Protection of privacy would nevertheless have to be sufficiently robust and transaction data would be available to supervised intermediaries only to the extent necessary. The Eurosystem, for its part, would not be able in any way to view transaction data of private individuals.

The Eurosystem has emphasised throughout the investigation phase that the private sector would play an important role in making a digital euro available to citizens. In 2022, a significant decision was taken that the distribution of a digital euro would be based on a payment scheme that specifies common rules, processes and standards.

Aim is not to replace current forms of payment

In Finland as in many other euro area countries, electronic payment instruments have long been used in daily payments. The Eurosystem's intention is to increase the alternatives for making payments, rather than restrict them; it is not the aim to replace cash or the services provided by banks and payment institutions.

A digital euro could, however, improve access to services and competition, and could contribute to ensuring the payment system can function reliably at all times by providing citizens access to a European payment solution. This would also allow payment flows to be maintained and developed in a way that reflects more closely the views of euro area citizens.



Banknotes and cash supply

One of the basic functions of the Bank of Finland is to maintain the cash supply and issue banknotes in Finland. The Bank of Finland acts in cooperation with other parties involved in cash supply to ensure that banknotes are available, genuine and in good condition. In recent years the importance of this cooperation has increased.

The COVID-19 pandemic reduced the use of cash substantially in 2020 and 2021, but in early 2022 its use picked up as the pandemic eased and travel and tourism revived.

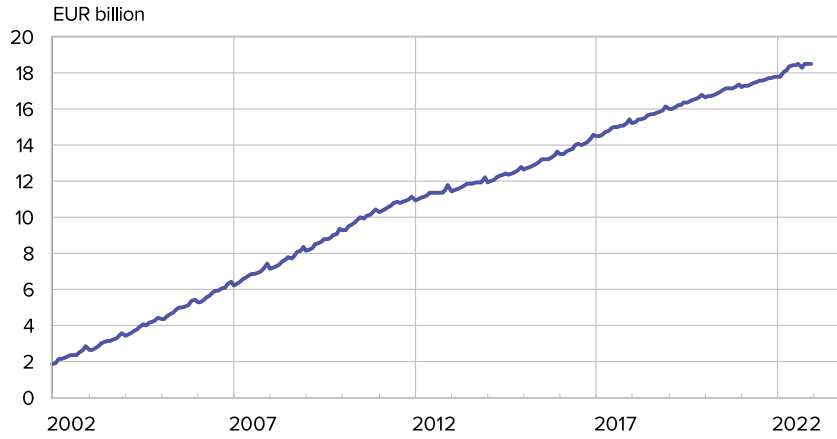
Cash use then grew more quickly than expected following Russia's invasion of Ukraine at the end of February, as people wanted to prepare for possible disruptions to payment systems by putting aside extra cash.

Demand for cash increased in 2022

In March 2022, EUR 253 million more in banknotes was issued than in February. In May too, the issue of banknotes increased by EUR 193 million compared to the previous month. Chart 14 shows the figures for banknotes issued by the Bank of Finland, and Chart 15 the difference between the orders and returns of banknotes from and to the Bank of Finland in different years.

Chart 14.

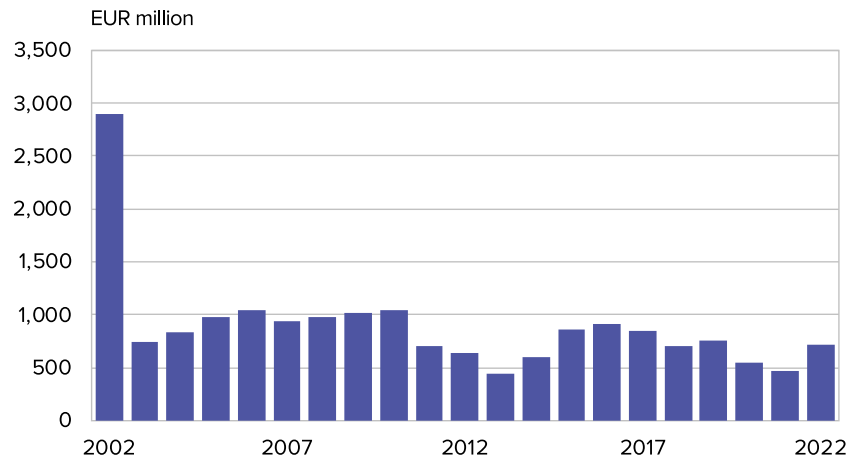
Banknotes issued by the Bank of Finland



Source: Bank of Finland.

Chart 15.

Difference between banknote orders and returns in different years



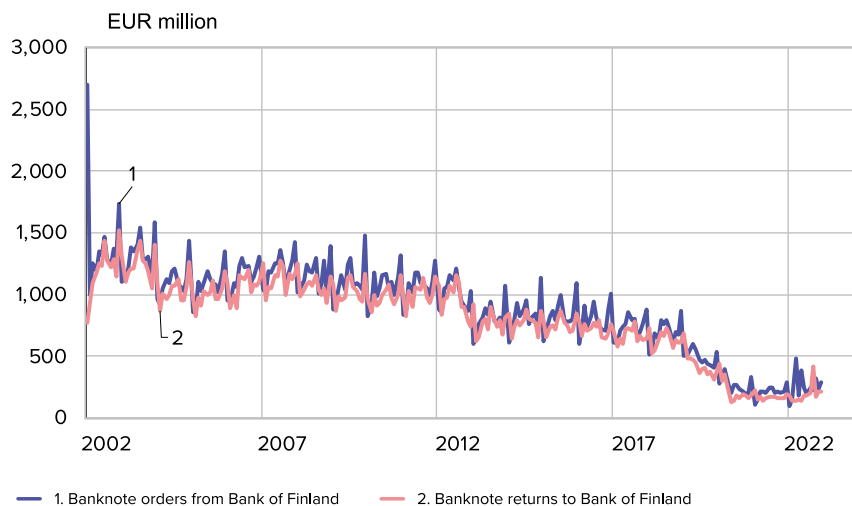
Source: Bank of Finland.

In the early part of the year, there was considerable discussion about the [‘home emergency kit’ for payments](#) and generally about preparedness for unexpected events. The Bank of Finland recommends that households should keep enough cash to last them for up to 72 hours in the event of payment system disruptions.

The rises in key European Central Bank (ECB) interest rates in the summer and autumn were also reflected briefly as increases in the number of banknotes returned to the Bank of Finland (Chart 16).

Chart 16.

Banknote orders and returns from and to the Bank of Finland



Source: Bank of Finland.

Cash payments in Finland are few

With the outbreak of the COVID-19 pandemic in 2020, the use of cash – already in decline – decreased even further and undermined the profitability of cash services.

According to a [consumer survey conducted by the Bank of Finland in March 2022, the availability of cash had declined](#), and consumers felt that the problem had worsened, especially at bank branches. At the same time, Russia's war nevertheless highlighted the importance of cash in preparing for a crisis. The Bank's March 2022 consumer survey revealed that approximately 7% of respondents use cash as a means of payment for groceries. [The ECB's study on the payment attitudes of consumers in the euro area \(SPACE\) gives a similar result.](#)

The Bank of Finland also published a study on [the costs of retail payments](#). The study suggests that payment by card was the lowest cost payment method: in 2018 a single card payment cost society around 15 cents, a cash payment 22 cents and a bank transfer 25 cents.

Bank of Finland wishes to safeguard cash services

In March 2022, the Bank of Finland proposed a [legislative initiative for securing a sufficient level of cash services](#).

In 2018, the Bank published its guiding principles for [the maintenance of cash services](#). The aim of the regulatory initiative is to achieve a level of service that matches the guiding principles on cash and over the longer term as well.

The Bank of Finland considers it appropriate to initiate a regulatory project for defining the level of cash services, the availability of cash and cash deposits and the acceptance of cash as a means of payment.

The regulation should enter into force before services deteriorate to below a level that is reasonable for society.

The status of cash is also a subject of debate within the Eurosystem. The Euro Legal Tender Expert Group (ELTEG) examined the situation within the entire euro area and published a final report on the matter. [According to the report, most countries that use the euro have regulation in place for defining mandatorily the legal tender status of euro cash](#).



The Bank of Finland proposed a legislative initiative for safeguarding a sufficient level of cash services in Finland.

Newly amended Coins Act now reflects EU law

Under the [Coins Act \(216/1998\) \(in Finnish\)](#), in Finland the State has the right to mint coins and the coins are issued by the Bank of Finland. Damaged coins may not be used as a means of payment and need not be accepted as payment.

The Bank of Finland is obliged to accept and exchange damaged coins if it can be established with certainty that they are genuine.

The updated version of the Act entered into force in November 2022 to reflect the content of the [Regulation of the European Parliament and of the Council](#) on the matter.

The amended Act includes a provision that the Bank of Finland can refuse reimbursement of coins that have been altered either deliberately or by a process.

Furthermore, the Bank of Finland may refuse to accept coins where the acceptance or processing of them constitutes a health risk for handlers or a submission fails to meet packaging and labelling standards.

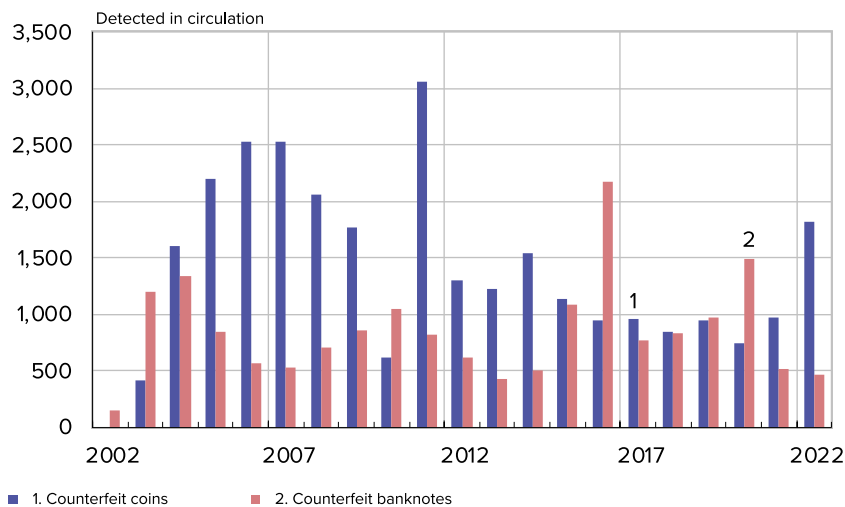
Use of counterfeit euro cash at an all-time low in 2022

[In 2022, there were fewer counterfeit euro banknotes detected in circulation in Finland and the euro area than ever before – for the second year running.](#)

A total of 469 counterfeit banknotes were discovered in Finland in 2022. The number of counterfeit coins found was 1,826. (Chart 17). Most common among the counterfeits were 20 euro notes, of which there were 229.

Chart 17.

Counterfeit banknotes and coins in Finland



Source: National Bureau of Investigation.

After a two-year break, seminars on banknotes were organised by the Bank of Finland for professional cash handlers and held in Helsinki and Lappeenranta.

Furthermore, at [the Bank of Finland Open Doors event](#) at the end of September and beginning of October, visitors had an opportunity to inspect counterfeit banknotes and compare them with genuine notes.



Payment systems development requires continuous input

The Bank of Finland's oversight tasks include the assessment of system risks, policy work to promote payment efficiency, and analysis that supports these tasks. The Bank of Finland plays an active role in the continuous development of payment systems. Summer 2022 saw the creation in Finland of the national emergency account system, a collaboration between various authorities to secure daily payments in the event of serious disruptions and in emergencies.

The national emergency account system is a backup system that allows cash withdrawals, credit transfers and debit card payments. It can be used in situations where the systems and payment systems normally used by credit institutions, such as TARGET2 or [EBA Clearing](#), are not available for several days.

The backup arrangement is based on the Act on Certain Backup and Emergency Arrangements in the Financial Sector ([666/2022 \(in Finnish\)](#)).



The Bank of Finland and other public authorities together prepared backup systems aimed at protecting the ability to make everyday payments under all circumstances.

Bank of Finland published its guiding principles on electronic payments in May 2022

The Bank of Finland published its guiding principles on electronic payments at the [Payments Forum \(in Finnish\)](#) in May 2022. They summarise the Bank's views on efficient payment systems.

The guiding principles reflect the retail payment strategies of the European Commission and the European Central Bank (ECB).

Chart 18.



Instant payment gives consumers more options

Instant payments are bank transfers in which funds are transferred from the payer's account to the payee's account in just a few seconds at any time of the day or night on any day of the year.

In October 2022, the European Commission published a proposal for a Regulation ([COM\(2022\)546](#)) to promote instant payments. According to the proposal, entities offering a euro credit transfer service would also have to offer a service for sending and receiving instant euro payments, with the price charged for this consistent with credit transfers.

The objectives of the Euro Retail Payments Board (ERPB) focus especially on promoting instant payments and the clarity of account information for customers. At a meeting held in September 2022, the Finnish Payments Council considered that the promotion of instant payments would require more extensive cooperation on the part of different operators.

Instant payment should give customers more options and be of benefit to both payers and payees. The Finnish Payments Council set up a working group to establish an instant payments concept for the Finnish market, and the work is continuing in 2023.

The Payments Council also set up a monitoring group [to ensure transparency for retail payments end users](#). Payment service providers play a key role, as do the commercial sector and companies, in particular.

International cooperation and protecting financial sector services from cyber risks are more important than ever

Russia's war in Ukraine and Finland's NATO membership progress have increased the threat to Finland's critical infrastructure in both the physical and the cyber environment.

[The reported attacks on the National Cyber Security Centre suggest](#) that Finnish organisations are more and more frequently being targeted directly, which underlines the importance of protection and testing.

In 2022 the Finnish financial sector continued with its data security testing under the [TIBER-FI framework](#) with both Finnish operators and the other Nordic countries.

Diverse analysis supports the Bank of Finland's oversight activities and policy work

Payment technologies are such that it would be possible to create payment systems that facilitate global trade. However, cross-border payments in different currencies have been the slowest area of all to develop.

In October 2022, the Bank of Finland published a Bank of Finland Bulletin article on a [G20 initiative to make foreign payments of companies and consumers more efficient \(in Finnish\)](#). The planned project will mainly involve big companies that have a large number of international payment transactions.

The Bank of Finland Bulletin article on [the pandemic's role in accelerating the decline in cash use and increasing online shopping payments \(in Finnish\)](#) examined changes in the payment habits of Finnish and euro area consumers during the COVID-19 pandemic.

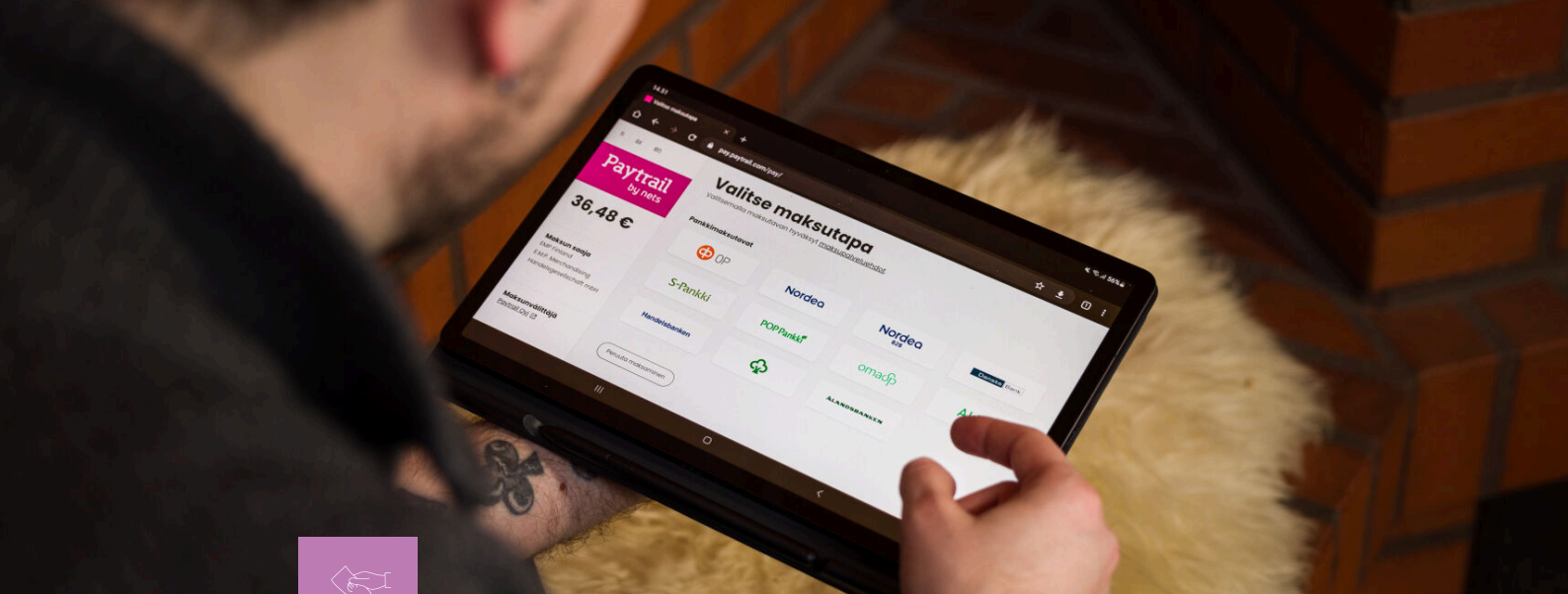
According to the ECB's [SPACE study](#), on which the article was based, the use of cash at points of sale between 2019 and 2022 declined in Finland to a level lower than in the other countries of the euro area, although over half of Finns think it is important to be able to pay in cash. At the same time, the acceptance of cash at points of sale has decreased in Finland to one of the lowest levels in the euro area.

In 2022 the Bank of Finland continued to develop its [payment and settlement system simulator](#) (BoF-PSS3) and consulted the Bank of Namibia in a quantitative analysis of the payment system.

At the end of August, the 20th simulator seminar was held in Helsinki. The central banks of Poland and Namibia, among others, presented the analyses they had conducted using the BoF-PSS3 simulator. A training course was also organised in conjunction with the simulator seminar for new users of the BoF-PSS3 simulator.

2022 also saw the continuation of a development project in which the Bank of Finland, together with the ECB, is to provide the Eurosystem with a new analysis environment and simulation software for TARGET services.

The simulator is also being used for the Bank of Finland's own analysis work. The counterparty and liquidity risks that banks face in payment systems are examples of the areas where oversight is linked to the central bank's financial stability function and the work of the Financial Stability Authority.



Further development of TARGET services in 2022

The Bank of Finland provides the Eurosystem's common TARGET services to Nordic financial sector entities. In 2022 the Bank of Finland maintained the current systems and actively participated in new TARGET development projects.

The Eurosystem's common TARGET services consist of the TARGET2 payment system, the TIPS instant payment system and the T2S securities settlement system.

Reliable functioning of TARGET systems supported financial system stability in 2022

The stable and effective functioning of the TARGET services permits the smooth flow of cash, securities and collateral everywhere in Europe and therefore supports the single monetary policy.

The TARGET systems functioned reliably throughout 2022 and there were no major disruptions.

The Eurosystem and the Bank of Finland actively make provision for risks to market infrastructures. A greater number of contingency exercises were carried out with Bank of Finland participants in 2022.

Number and total value of TARGET2-Suomen Pankki system payment transactions up in 2022

[TARGET2](#) is one of the biggest payment systems in the world and is owned by the central banks in the Eurosystem. More than one thousand credit institutions have a TARGET2 account. It is used, for example, for interbank retail payments made using central bank money. It is also used for executing monetary policy operations in the euro area.

At the end of 2022, a total of 23 Nordic banks and ancillary systems used the Bank of Finland's TARGET2-Suomen Pankki component.

The average daily number of payments settled via the TARGET2-Suomen Pankki component in 2022 was 4,350, with a total value of around EUR 49 billion.

The number of daily payments was up by 21%, and its value by 20%, compared to 2021.

Bank of Finland preparing for new T2 system

The current TARGET2 system introduced in 2007 is to be replaced with the new T2 payment system as part of the [T2-T2S consolidation project](#).

The purpose is to adopt new payment messaging standards, update the liquidity management of the TARGET systems and link the various systems to one common technical platform.

In 2022 the Bank of Finland made preparations for the introduction of the T2 system in association with the other central banks and supported its participants in testing the system.

Towards the end of the year, the Bank and its participants moved on from the testing phase to preparations for the system's introduction.

Although the new T2 system was supposed to be introduced at the end of 2022, the challenges that arose in testing it meant that the [Governing Council of the European Central Bank \(ECB\) decided to postpone its adoption until March 2023](#), to allow participants sufficient time to prepare for the introduction.

Bank of Finland participants in the SEPA Instant Credit Transfer scheme have joined the TIPS instant payment system

In accordance with a [decision of the Governing Council of the ECB](#), all payment service providers that are in the TARGET2 system and adhere to the [SEPA Instant Credit Transfer scheme](#), had, by February 2022, to be reachable in the [TIPS \(TARGET Instant Payment Settlement\)](#) system. The objective is to promote the use of instant payment and improve accessibility in the euro area.

All Finnish banks making SEPA instant credit transfers were ready to receive such transfers via the TIPS system by the deadline set.

Euroclear Finland's migration to the T2S system is under way

[The T2S system](#) is a securities settlement platform used by the Eurosystem. It makes possible real-time delivery-versus-payment (DvP) settlement of securities in central bank money.

The Finnish central securities depository Euroclear Finland will adopt the T2S system in September 2023. The system will then assume a growing importance for Finnish financial sector entities.

In 2022 the Bank of Finland, together with the ECB, prepared for Euroclear Finland's migration to the T2S system and aided its future T2S participants in their deployment of the system.

Eurosystem Collateral Management System to be introduced in 2024

Currently, every national central bank within the Eurosystem has its own system for managing the assets used as collateral for monetary policy credit operations.

The Eurosystem is replacing these 20 national systems with the unified [Eurosystem Collateral Management System \(ECMS\)](#).

The aim is to make collateral management in the Eurosystem more effective and allow speedier adoption of decisions on the monetary policy collateral framework.

Towards the end of 2022, the Bank of Finland began ECMS connectivity testing and prepared user testing for monetary policy counterparty banks. Because of the rescheduled launch of the new T2 system, [the Governing Council of the ECB decided to postpone the launch of the ECMS system until April 2024.](#)



Management of financial assets

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Management of financial assets

24.3.2023

One of the statutory tasks of the Bank of Finland is the holding and management of foreign reserves. Market conditions in 2022 were challenging, and the return on the Bank of Finland's financial assets was close to zero.

The Bank of Finland's asset investments are guided by the investment policy decided annually by the Bank's Board.

The investment policy, including the responsible investment principles, establishes a strategic market-based index that serves as a benchmark for the Bank's investment activities.

Return on Bank of Finland's financial assets in 2022 close to zero

Market conditions in 2022 were challenging, as the returns globally from both equity and fixed-income investments were mostly negative. However, the return on the Bank of Finland's financial assets was close to zero, which was attributable particularly to the strengthening US dollar and the rise in the price of gold.

At the end of 2022, the Bank of Finland's financial assets amounted to around EUR 11 billion. These consisted of gold holdings, foreign reserves and investments in equity and real estate funds.

Switch in 2022 from fossil investments to those supporting the green transition

In 2022, the Bank of Finland updated its responsible investment principles. It also excluded fossil fuel producers from its potential investments.

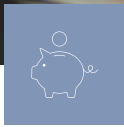
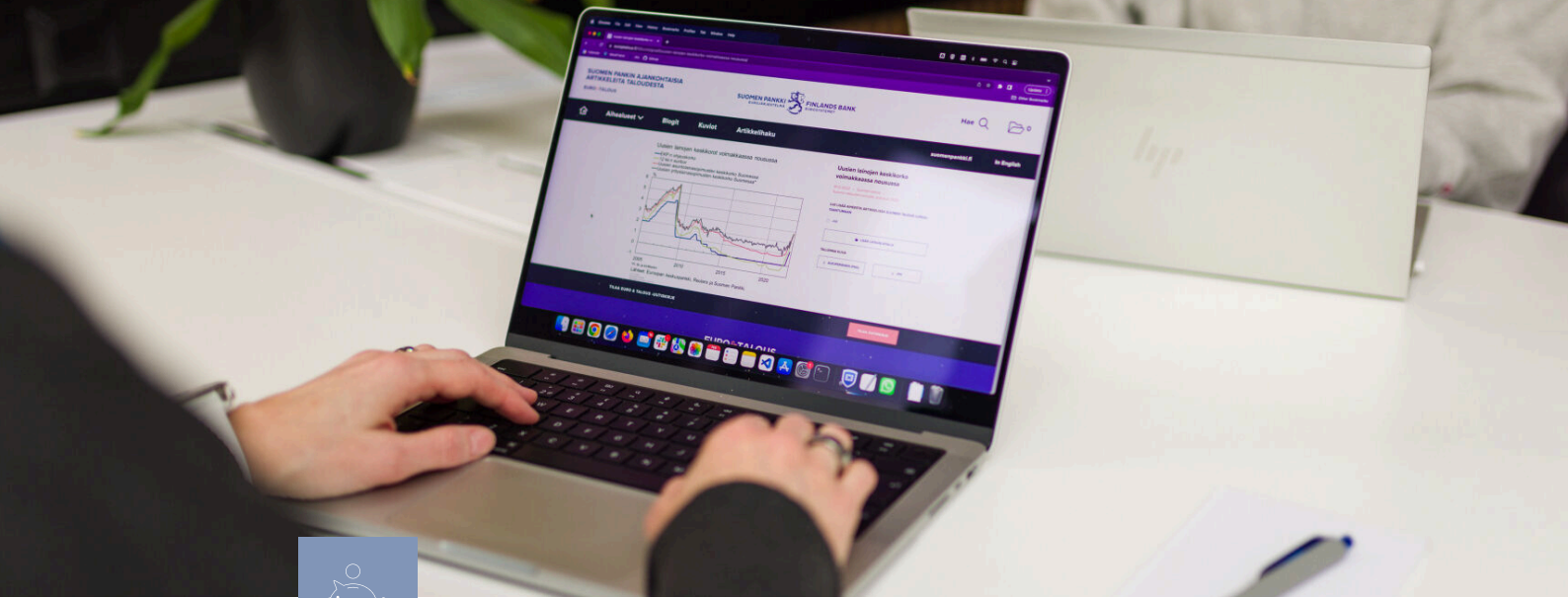
The Bank of Finland was also actively involved in the drafting of the Eurosystem's common stance on climate-related disclosures.

Increased risks associated with Bank of Finland's monetary policy and financial assets in 2022

In 2022, the Eurosystem's policy interest rates were increased, including the interest rate banks receive for depositing money with the central bank.

Based on the interest rate expectations prevailing at the end of 2022, this financing cost will push the Bank of Finland's profit into negative territory in the immediate years ahead.

The Bank of Finland manages its risks through diversification, but there is a structural interest rate risk on its balance sheet.



Bank of Finland's management of financial assets in 2022

Market conditions were exceptionally challenging in 2022, as the returns globally on both equity and fixed-income investments were mostly negative. However, the return on the Bank of Finland's own financial assets was close to zero in 2022, which was attributable particularly to the strengthening US dollar and the rise in the price of gold.

The Bank of Finland's financial assets consist of the balance sheet items which fall under the Bank's investment activities. At the end of 2022, these assets totalled approximately EUR 11 billion. The Bank's financial assets do not include items related to Eurosystem monetary policy measures, for example monetary policy asset purchase programmes or loans to banks.

The Bank of Finland decides on the volume of its financial assets within the framework of the [Agreement on Net Financial Assets \(ANFA\)](#). ANFA is an agreement between the national central banks in the Eurosystem and the European Central Bank (ECB). It sets rules for the holdings of financial assets that are related to the domestic tasks of the national central banks.

The Bank of Finland's financial assets are managed in line with the central bank objectives, taking into account the returns on investment, the risks attached and the responsibility considerations. [Further emphasis was put on responsibility and on reporting of this during 2022.](#)

Bank of Finland's foreign reserves play a key role in preparing for risks

Holding and managing foreign reserves are among the statutory tasks of the Bank of Finland. The volume of the Bank of Finland's foreign reserves and the currency composition is a strategic decision based on considerations of preparedness.

The decision is taken by the Bank's Board as and when necessary, and at least once every three years. The currency-specific targets for the period 2022–2024 are set at USD 5 billion, GBP 650 million and JPY 95 billion, respectively.

The management of foreign reserves has a key role in the Bank of Finland's endeavours to ensure that it is financially equipped to deal with future uncertainties and risks.

If necessary, the national central banks in the Eurosystem can be required to transfer some of their foreign reserves to the ECB. Furthermore, the Bank of Finland makes provision for crises that can weaken Finland's external solvency.

Composition of financial assets

At the end of 2022, the Bank of Finland's financial assets amounted to around EUR 11 billion (Table 5). These assets comprised direct and indirect fixed-income investments, equity and real estate fund investments, gold holdings and items denominated in IMF Special Drawing Rights (SDRs).

Direct and indirect foreign currency-denominated fixed-income investments and SDR items comprise the foreign reserves. The Bank of Finland's gold holdings amounted to EUR 2.7 billion at the end of 2022. The Bank did not engage in active investment activity in gold in 2022.

Table 5.

The Bank of Finland's financial assets, EUR million	31 Dec 2022	31 Dec 2021
Gold	2,690	2,537
Foreign reserves	6,861	6,719
SDR	933	690
US dollar-denominated fixed-income	4,274	4,256

Sterling-denominated fixed-income	718	777
Yen-denominated fixed-income	684	732
Fixed-income funds	252	264
Euro-denominated fixed-income	0	0
Equity funds	1,328	1,513
Real estate funds	156	176
Total	11,035	10,946

Source: Bank of Finland.

Policy on investment in financial assets

The Bank of Finland's asset investments are guided by the investment policy decided annually by the Bank's Board. The investment policy covers fixed-income investments, long-term investment and the principles of responsible investment.

The policy on fixed-income investments sets a strategic allocation for the Bank's investments by asset class and determines an appropriate level of interest rate risk for the various currencies.

Long-term investment has a higher expected return and lower liquidity requirement than with other portfolios. The risk-return ratio improves for the balance sheet as a whole when the portfolio of investments is diversified.

The Bank of Finland updates the principles of responsible investment every year in connection with its investment policy, and at other times as necessary. [The principles of responsible investment](#) and the practical measures taken in 2022 are described in their own section.

The investment policy, including the responsible investment principles, establishes a strategic market-based index that serves as a benchmark for the Bank's investment activities. The Bank's Asset Management Division may deviate from the strategic index within a pre-set range and in accordance with the investment policy's risk limits.

A long-term investment policy that takes account of balance sheet risks as a whole ensures that the balance sheet is healthy and promotes the Bank of Finland's target for steady profit distribution to the State, without endangering capital adequacy.

Fixed-income portfolios in 2022

At the end of 2022, the Bank of Finland had direct fixed-income investments worth EUR 5,676 million.

These comprised sovereign bonds and central bank deposits (58.9 %), multinational or government-related bonds (25.3%), covered bonds (4.1%), corporate bonds (11.4%) and cash instruments (0.3%).

Fund-based fixed-income investments were worth EUR 269 million in total. They consisted entirely of an investment in the Green Bond fund of the Bank for International Settlements (BIS).

As a measure of interest rate risk, the average duration of the fixed-income portfolios at the end of 2022 was 1.7 years. Fixed-income investments are made in debt securities with high credit ratings.

Long-term investment

In 2022, the Bank of Finland's long-term investment consisted of equity and real-estate investments handled indirectly through funds. The value of the portfolio at the end of the year totalled EUR 1,484 million.

Equity investments were made in index funds that mirror the global index for developed markets and which take account of sustainability and climate issues. The equity investments were made cost-effectively by means of passive exchange traded funds (ETFs).

The Bank of Finland's real estate investments are diversified across a number of unlisted European funds. Each of the funds owns real estate in desirable locations, which makes the properties easy to let. This ensures a steady return on investment over the long term in the form of rental income.

Financial asset returns and risks

The Bank of Finland's financial assets yielded an overall return of -0.18%, or EUR -24.3 million, in 2022 (Table 6).

The global economy grew in 2022, although uncertainty about economic growth put pressure on valuations of higher risk asset categories. Inflation persisted globally, and this forced central banks to raise policy rates at a brisk pace, which was reflected in interest rate increases worldwide.

The rise in interest rates meant that the return on fixed-income investments was negative, at EUR -192.9 million. The return on fixed-income investments denominated in US dollars stood at EUR -175.1 million, in pounds sterling at EUR -17.6 million and in yen at EUR -0.4 million.

Listed shares saw their all-time high valuation at the start of the year return to a longer term average value at the end of the year. Such issues as uncertainty concerning future economic growth, increased interest rates and geopolitical risks all contributed to the fall in share prices in 2022.

But despite the stock market decline, companies were still able to make a reasonable profit, although in future it may be challenging for businesses to maintain their profit margin due to economic growth showing signs of fading. The total return on the Bank of Finland's equity investments in 2022 was -17.7%, or EUR -269 million.

The annual return on real estate funds fluctuates with the rents received and the changes in value of property. The year 2022 was a challenging one for the real estate market. The rise in interest rates and prices combined with the uncertain outlook for the economy put pressure on valuations, even though tenants were still reasonably able to pay their rent as normal. The return on the Bank of Finland's real estate investments in 2022, at 6.7%, or EUR 10 million, was reasonable given the market situation.

The Bank's real estate investments were in unlisted real estate funds investing in the lowest risk section of the market, i.e. core funds. The change in their values lags behind the market for listed real estate funds. Consequently, 2023 may turn out to be a more challenging year for the Bank of Finland's real estate portfolios.

The year 2022 was an exceptional one for investment, as the values of both fixed-income and higher risk investments fell considerably and the conventional benefits of diversification were not available. Nevertheless, the Bank of Finland's financial assets increased in value, especially as the dollar strengthened and the price of gold rose.

The appreciation of the dollar against the euro was evident as a positive revaluation gain of EUR 263 million. The value of fixed-income investment items denominated in foreign currency rose overall by EUR 179 million. This comprised a change of EUR 286 million in US dollar-denominated assets, EUR -29 million in sterling-denominated assets and EUR -78 million in yen-denominated assets. Currency revaluation related to the equity portfolio in 2022 was EUR 84 million.

Table 6.

Return on the Bank of Finland's own financial assets	2022		2021	
	%	EUR m	%	EUR m
Fixed-income investments	-3.1	-193	-0.6	-35
Equity funds	-17.7	-269	23.1	273
Real estate funds	6.7	10	6.5	10
Currency revaluation	3.5	263	6.8	483
Excluding gold and SDR	-2.5	-188.0	10.5	731.0
Gold	6.0	152	4.3	103
SDR	1.8	11	4.9	32
Total	-0.2	-24	8.6	866

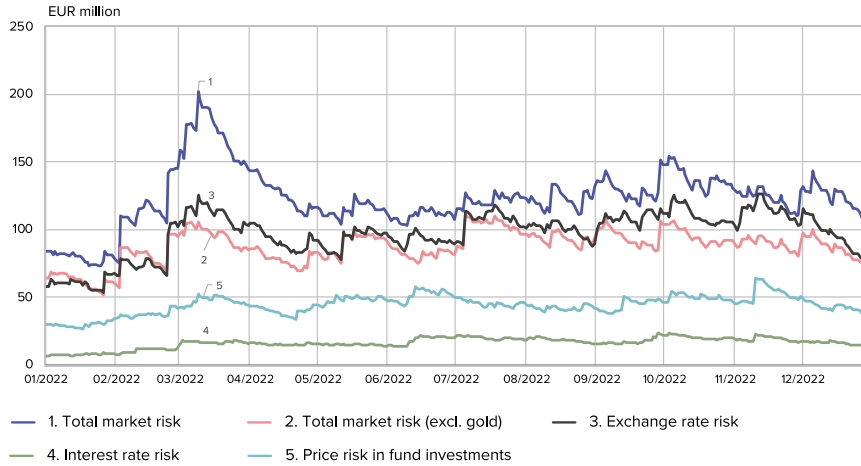
Source: Bank of Finland.

The total market risk associated with the Bank's financial assets (Value-at-Risk 99%, 1 day) varied between EUR 73 million and EUR 202 million in 2022 (Chart 19).

Exchange rate risk is the Bank of Finland's most significant risk associated with its foreign currency- denominated fixed-income investment portfolios. The volume of the Bank's foreign reserves has been scaled to the level required for the functions of a central bank.

Chart 19.

VaR figures for market risk in the Bank of Finland's financial assets in 2022*



Source: Bank of Finland.
*Daily period, 99% confidence level.

Share of the European Central Bank's foreign reserves in 2022

[The European Central Bank has foreign reserves of its own.](#) Management of the foreign reserves of the ECB is distributed among the national central banks in the Eurosystem [according to their respective capital keys](#). The Bank of Finland manages part of the ECB's foreign reserves together with the Estonian central bank, Eesti Pank.

In the management of the ECB's foreign reserves, the emphasis is on security and liquidity, as the key purpose of the reserves is to ensure the availability of sufficient resources for the Eurosystem's foreign exchange operations.

The value of Finland and Estonia's pooled US dollar-denominated portfolio of ECB foreign reserves at the end of 2022 stood at EUR 1,178 million.

For additional information on the management of the ECB's foreign reserves, see the [ECB Annual Report](#).



Responsible investment brings real emission reductions

In 2022, the Bank of Finland updated its responsible investment principles and excluded most fossil fuel producers in a significant manner from its potential investments. The Bank was also actively involved in the drafting of the Eurosystem's common stance on climate-related disclosures.

The sustainability of the Bank of Finland's own investment activities is guided by its publicly available [principles of responsible investment](#). The principles, adopted by the Bank of Finland's Board, also set out the Bank's climate targets and the related restrictions on investments.

The Bank of Finland has set a carbon neutrality target for its investment activities, which it aims to achieve by 2050 at the latest. To achieve this target, the Bank has also defined quantitative and qualitative targets for its investment activities.

Switch from fossil investments to those supporting the green transition

In 2022, the Bank of Finland updated its responsible investment principles by adding unconventional forms of fossil fuel production, for example Arctic and deep-sea drilling, to the previously defined restrictions. The Bank of Finland will not, as a rule, invest in issuers that have business activities related to unconventional forms of fossil fuel production.

Financing of the green transition remains an active area of investment, however. This means the Bank of Finland may still invest in bonds of excluded issuers if the securities in question are financing the green transition.

This exception related to green bonds does not apply, however, to issuers that have been excluded from the Bank of Finland's investment activities on the grounds of other sustainability criteria, such as human rights violations.

Comprehensive assessment of sustainability criteria; issuers also excluded from indices

The Bank of Finland assesses the sustainability of issuers from the perspective of environmental, social and corporate governance (ESG) issues. The assessment utilises sustainability information from external service providers.

Based on the assessment, the Bank of Finland's working group on responsible investment takes a decision on the issuers to be excluded from the group of permitted investments. These issuers will also be excluded from the benchmark indices of the Bank's investment activities.

If an issuer does not meet the sustainability criteria set by the Bank of Finland, the working group on responsible investment can still grant an exception if the issuer has a credible plan for changing its business activities, for setting targets or for other appropriate measures.

The working group regularly monitors those issuers that have been granted an exception. An exception already granted can be revoked if the progress demonstrated by the company is not sufficient.

Eurosystem's first common climate-related disclosures

The European Central Bank (ECB) and the national central banks of the Eurosystem agreed in early 2021 to introduce a common stance for climate-related disclosures of euro-denominated non-monetary policy portfolios in the first quarter of 2023.

To improve comparability of the disclosures, the Eurosystem carried out an extensive public tender for climate-related data, which was completed in the first half of 2022.

The Bank of Finland participated actively in the procurement working group and was involved in both the preparation of the tender procedure and the assessment of the participating service providers.

As a result of the public tender, ISS and Carbon4Finance (C4F) were selected as the Eurosystem's common climate data providers.

The minimum requirements for the Eurosystem's common climate-related disclosures refer to:

- the portfolio’s absolute emissions
- the portfolio’s weighted average carbon intensity (WACI)
- the portfolio’s emissions per 1 million euro invested
- long-term climate target
- size of portfolio
- asset classes
- data source
- data coverage.

The Bank of Finland has decided to also disclose the climate risks related to non-euro denominated portfolios and to include elements that exceed the minimum requirements, such as forward looking metrics. [The full report will be published on the Bank of Finland’s website.](#)

This is the first time that the Bank of Finland is publishing the climate footprint of its own securities investment portfolios.

The disclosed asset classes are divided into fixed-income investments and equities. In addition to direct investments, the report also includes fund investments. Fixed-income investments are divided by type of issuer, because the calculation formula for government bonds differs from that for corporate bonds (Table 7).

Table 7.

Climate-related figures for the Bank of Finland’s own investment activities classified in accordance with the Eurosystem’s common stance on climate-related disclosures			
Sovereign issuers			
Sovereign and sub-sovereign			
	Production	Consumption	Government
Portfolio value (EUR million)		2,424	
WACI (tonnes of carbon dioxide equivalent per purchasing power parity adjusted GDP)	300	20	280
WACI (climate data coverage)	100%	100%	100%

Climate-related figures for the Bank of Finland's own investment activities classified in accordance with the Eurosystem's common stance on climate-related disclosures

Absolute carbon emissions (tonnes of carbon dioxide equivalent)	727,000	798,000	105,000		
Absolute carbon emissions (climate data coverage)	100%	100%	100%		
Carbon footprint (tonnes of carbon dioxide equivalent per EUR million invested)	300	330	40		
Carbon footprint (climate data coverage)	100%	100%	100%		
Non-sovereign issuers					
	TOTAL	Supranational issuers	Covered bonds	Corporate bonds	Equities
Portfolio value (EUR million)	3,081	834	247	678	1,323
WACI (tonnes of carbon dioxide equivalent per purchasing power parity adjusted GDP)	80	<10	<10	80	140
WACI (climate data coverage)	88%	67%	100%	98%	100%
Absolute carbon emissions (tonnes of carbon dioxide equivalent)	124,000	<100	<100	55,000	69,000
Absolute carbon emissions (climate data coverage)	88%	67%	100%	98%	100%
Carbon footprint (tonnes of carbon dioxide equivalent per EUR million invested)	40	<1	<1	80	50
Carbon footprint (climate data coverage)	88%	67%	100%	98%	100%
Sources: ISS, C4F and World Bank.					

The percentages below the figures refer to the coverage of the climate data.

[More information on the calculation principles for the Bank of Finland's figures is available here.](#)

An international reporting standard for gold investments is not yet available, and therefore these are not included in the calculation. Neither does the report include real estate investments, as the calculation for these differs from the calculation of listed securities.

The real estate investment funds used by the Bank of Finland report extensively on their own environmental impacts and have set long-term climate targets for their own activities.

Changes in equity investment funds had a significant impact on the equity portfolio's emissions

The Bank of Finland's objective is to reduce by half the weighted average carbon intensity (WACI) of equity investment from the baseline figure of 151 tCO₂e (tonnes of carbon dioxide equivalent) by the end of 2025.

In 2022, the emission intensity of equity investments declined significantly compared to the previous year (Table 8). This was due to investments totalling approximately USD 450 million in two ESG and climate funds.

Table 8.

Decline in the emission intensity of the Bank of Finland's equity investments between the baseline date and the end of 2022

	31 December 2022	31 December 2021	2021Q1 (baseline date)
WACI (tonnes of carbon dioxide equivalent per million USD revenue)	107	135	151
Reduction compared to baseline	-29%	-11%	-

Source: ISS.

New practices in fixed-income investments

For direct fixed-income investments, the Bank of Finland has set [fossil fuel production-related](#) quantitative constraints on turnover.

In line with its climate targets, the Bank of Finland also introduced in 2022 a new practice: issuer meetings. Issuers are encouraged to set climate targets and calculate the climate risks of investment activities.

The plan is to continue the issuer meetings in 2023.

Continued development of activities based on international recommendations

The Bank of Finland is constantly developing the sustainability of its own investment activities. Bank of Finland experts participate actively in domestic and international working groups, particularly within the framework of the Eurosystem. The Bank monitors changes in this field using both central banks and other investors as reference groups .

The Bank of Finland signed the UN-supported Principles for Responsible Investment in 2019, as one of the first central banks to do so. As part of its commitment to these principles, the Bank of Finland is required to report on measures for implementing and promoting sustainability.

The signatories to the commitment also receive an evaluation of their actions, which they can then make use of in further developing their sustainability. The evaluation enables the strengths and weaknesses of sustainability work to be identified within the context of an international reference group.



The Bank of Finland updated its principles of responsible investment and excluded fossil fuel producers from its portfolio.

Climate calculation principles

The contents of the Bank of Finland's portfolio are reported as at 31 December 2022. The climate calculations are based on the latest available data on emission levels as well as economic and other national-level data data. This means that the emission levels of holdings at the end of 2022 are mainly from 2021. Some data points may also be from 2020, due to the updates of data from external providers.

Calculation formulae for the tables

Equities

WACI (weighted average carbon intensity):

$$WACI = \sum_n^i \left(\frac{\text{current value of investment}_i}{\text{current portfolio value}} \right) \times \left(\frac{\text{issuer's GHG emissions}_i}{\text{issuer's revenue (EUR million)}_i} \right)$$

Absolute emissions:

$$TCE = \sum_n^i \left(\frac{\text{current value of investment}_i}{\text{Enterprise Value Including Cash (EVIC)}_i} \right) \times \text{issuer's GHG emissions}_i$$

Carbon footprint:

$$CF = \frac{\sum_n^i \left(\frac{\text{current value of investment}_i}{EVIC_i} \right) \times \text{issuer's GHG emissions}_i}{\text{current portfolio value (EUR million)}}$$

Fixed-income investments issued by sovereigns

WACI (weighted average carbon intensity):

$$WACI = \sum_n^i \left(\frac{\text{current value of investment}_i}{\text{current portfolio value}} \right) \times \left(\frac{\text{issuer's GHG emissions}_i}{\text{GDP, population, total consumption expenditure}_i} \right)$$

Absolute emissions:

$$TCE = \sum_n^i \left(\frac{\text{current value of investment}_i}{\text{PPP adjusted GDP}_i} \right) \times \text{issuer's GHG emissions}_i$$

Carbon footprint:

$$CF = \frac{\sum_n^i \left(\frac{\text{current value of investment}_i}{\text{PPP adjusted GDP}_i} \right) \times \text{issuer's GHG emissions}_i}{\text{current portfolio value (EUR million)}}$$

Other fixed-income investments

WACI (weighted average carbon intensity):

$$WACI = \sum_n^i \left(\frac{\text{current value of investment}_i}{\text{current portfolio value}} \right) \times \left(\frac{\text{issuer's GHG emissions}_i}{\text{issuer's revenue (EUR million)}_i} \right)$$

Absolute emissions:

$$TCE = \sum_n^i \left(\frac{\text{current value of investment}_i}{\text{Enterprise Value Including Cash (EVIC)}_i} \times \text{issuer's GHG emissions}_i \right)$$

Carbon footprint:

$$CF = \frac{\sum_n^i \left(\frac{\text{current value of investment}_i}{\text{EVIC}_i} \right) \times \text{issuer's GHG emissions}_i}{\text{current portfolio value (EUR million)}}$$



Management of Bank of Finland's financial risks in 2022

Implementing monetary policy and safeguarding the stability and functioning of the financial system are core central bank tasks. They involve financial risks, for which the Bank of Finland prepares by ensuring the strength of its balance sheet. In 2022, there was an increase in the risks associated with monetary policy and financial assets.

Risks arise in investment activities and in the implementation of monetary policy

At the end of 2022, the Bank of Finland's financial [assets amounted to about EUR 11 billion](#). These consisted of gold holdings, foreign reserves and equity and real estate fund investments. The financial assets do not include items connected with the implementation of monetary policy, such as monetary policy loans to banks or securities acquired in monetary policy operations.

Foreign reserves include liquid fixed-term investments. The amount of foreign reserves has been scaled to a level required in order for the Bank of Finland to perform its central banking tasks.

A significant proportion of the Bank of Finland's financial assets are debt securities purchased for monetary policy purposes and claims on banks resulting from monetary policy implementation. The Eurosystem's monetary policy measures are implemented on a decentralised basis among the different Member States and the ECB, but the risks and returns are largely shared among the national central banks.

The risk relating to monetary policy assets corresponds, in principle, to each national central bank's [capital key](#) share in the aggregate monetary policy assets of the national central banks. At the end of 2022, the Bank of Finland's share was 1.837%.

However, the risks associated with government debt instruments and government-related debt instruments purchased under the public sector purchase programme (PSPP) and the pandemic emergency purchase programme (PEPP) are borne individually by each national central bank involved.

Decrease in the volume of monetary policy assets

The volume of Eurosystem monetary policy assets decreased in 2022 by around EUR 700 billion and was approximately EUR 6.3 trillion at the end of the year. The decrease was due particularly to the early repayments of funding from the targeted longer-term refinancing operations (TLTROs).

Net purchases under the asset purchase programme (APP) and the PEPP were discontinued in the first half of 2022. Maturing principal payments from securities purchased under these programmes will be reinvested even after the end of 2022.

The Bank of Finland's share of monetary policy assets declined by around EUR 13 billion and was approximately EUR 106 billion at the end of the year.

Table 9.

Bank of Finland's financial assets and share of monetary policy assets	31 Dec 2022 EUR million	31 Dec 2021 EUR million
Financial assets	11,037	10,946
Gold	2,690	2,537
Foreign reserves	6,864	6,720
Euro-denominated fixed-income investments	0	0
Equity fund investments	1,328	1,513
Real estate fund investments	156	176
Share of monetary policy assets	106,168	118,748
Refinancing operations	24,327	40,446
Targeted longer-term refinancing operations ¹	24,203	40,375

Other refinancing operations ¹	123	70
Debt instruments under the asset purchase programme	53,757	50,121
Finnish government bonds and government-related bonds	37,295	34,554
Bonds of supranational institutions ¹	5,056	4,859
Covered bonds ¹	5,085	5,019
Corporate bonds ¹	6,321	5,688
Debt instruments under the pandemic emergency purchase programme ²	28,046	28,070
Terminated programmes	39	111
Securities markets programme ¹	39	101
Covered bond purchase programme	0	10
Total	117,206	129,694

1) Capital key share (1.837% as of 1 Feb 2020) of aggregate claims by national central banks.

2) In the case of the pandemic emergency purchasing programme the table shows the amount on the Bank of Finland's balance sheet.

In addition to the claims listed in Table 9, the Bank of Finland's assets included EUR 48 billion in intra-Eurosystem claims, consisting mainly of the [TARGET2 balance](#). [At the end of 2022, the Bank of Finland's balance sheet total was EUR 190 billion.](#)

Bank of Finland manages its risks through diversification

The Bank of Finland's financial risks consist of market, credit and liquidity risks. Market risk refers to the possibility of financial loss as a result of variation in, for example, exchange rates, interest rates and stock prices.

Exchange rate risk is the source of most volatility in the value of the financial assets. The Bank of Finland diversifies its exchange rate risk by investing in the US dollar, the pound sterling and the Japanese yen. The exchange rate risk is also diversified with investment in the Chinese yuan, since the Bank of Finland has receivables from the International Monetary Fund (IMF).

The strategic allocation of investments is determined by means of a benchmark index. This, together with a highly detailed limits framework, acts as a guide to taking on interest rate and credit risks. In this way, the Bank ensures that the investments are highly liquid and are adequately diversified across various asset classes, countries, maturities and issuers. The Bank's investment focus is on debt securities with high credit ratings.

The Bank of Finland invests some of its own funds in a variety of instruments on the international equity and real estate markets. The investments are made through funds and diversify the other risks on the Bank's balance sheet.

In the implementation of monetary policy purchase programmes, the Bank of Finland, in the same way as the other central banks, complies with the Eurosystem eligibility criteria and other risk-management rules.

[The Bank of Finland manages its financial assets in a responsible manner.](#) The counterparties accepted in direct fixed-income investments are delimited using specific sustainability criteria. Assessments of the responsibility and reliability of service providers are also emphasized in the Bank's indirect investment activities.

Structural interest rate risk on Bank of Finland balance sheet

Liquidity created via the purchase programmes and refinancing operations is reflected on the liabilities side of the Bank of Finland balance sheet as growth in central bank deposits.

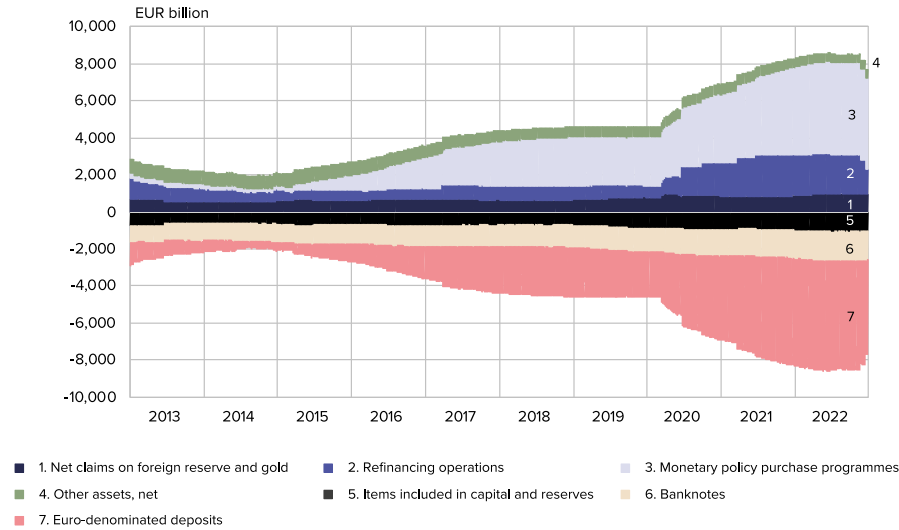
The Eurosystem sets, on monetary policy grounds, the interest payable on the central bank deposits made by commercial banks. The interest rate decision has an immediate effect on the Bank of Finland's interest expenses. Monetary policy assets, however, mainly carry a fixed interest rate. Thus, an increase in the deposit rate weakens the Bank's net interest income. This difference in the interest rates applied to assets and liabilities on the Bank's balance sheet poses a structural interest rate risk for the balance sheet.

The Bank's purchases of fixed-rate bonds in connection with monetary policy implementation in the past few years have been at a low yield level. In the second half of 2022, the Eurosystem's policy interest rates were raised, including the interest rate banks receive for depositing money with the central bank. Based on the interest rate expectations prevailing at the end of 2022, this financing cost will push the Bank of Finland's profit into negative territory in the immediate years ahead.

The structural interest rate risk will decrease as the fixed-rate debt instruments acquired for monetary policy reasons mature. However, the reinvestment of principal payments from maturing bonds serves, at the same time, to maintain the structural interest rate risk position.

Chart 20.

Developments in Eurosystem balance sheet items



Quarterly updates on financial risk figures are available at suomenpankki.fi, under the section [‘Risk management and control’](#).

Increased risks associated with Bank of Finland’s monetary policy and financial assets in 2022

The Bank of Finland’s financial risks increased in 2022 in comparison with the previous year. The increased uncertainty regarding market interest rates increased market risk. Moreover, the deterioration of the market situation increased the credit risk associated with debt instruments.

The Bank of Finland measures total risk exposure on the balance sheet using well established statistical methods. In measuring the credit risk arising from monetary policy assets, the Bank of Finland uses internal risk reporting produced by the ECB, which is subject to ongoing development by the Eurosystem’s Risk Management Committee.

As an estimate of total risk, the Bank of Finland uses a figure representing the loss that would occur in the following year with a probability of 1% (expected shortfall at a 99% confidence level). The risk estimate is supplemented with stress tests that assess losses which could be incurred under possible, though improbable, scenarios.

At the end of 2022, the total risk estimate was EUR 3.2 billion. This figure does not include the gold price risk, as the gold revaluation account covers a significant decline in value. If the gold price risk is included, the total risk estimate is the same, at EUR 3.2 billion.

Chart 21.

Bank of Finland's total risk exposure, capital and reserves, excl. gold price risk and gold revaluation accounts



Source: Bank of Finland.

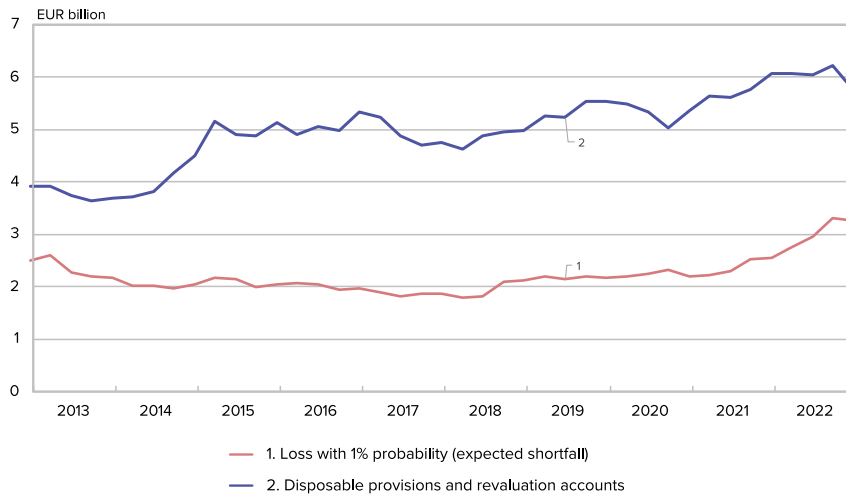
At the end of 2022, the Bank of Finland had revaluation accounts totalling EUR 1.2 billion and provisions totalling EUR 4.5 billion available to cover losses. The primary capital and reserve fund amounted to EUR 2.9 billion (Chart 21).

Risk buffers weakened during 2022 as fixed-income and equity investments declined in value.

The Bank of Finland's capital adequacy is sufficient to cover the risks arising from the performance of its tasks (Chart 22).

Chart 22.

Risks and risk buffers excl. gold and gold revaluation accounts



Source: Bank of Finland.



Engagement and cooperation

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Engagement and cooperation

26.3.2021

The importance and reliability of the Bank of Finland's communications took on great significance amid the crises experienced in 2022. The Bank of Finland expressed its views on various matters including particularly the impact of the energy crisis on the Finnish economy and the assessment of related policy measures.

The Bank of Finland provides independent and research-based analysis and expertise for use by decision-makers and in Finnish society in general.

As in previous years, the Bank of Finland analysed the state of the economy and took part in the domestic debate on economic policy.

Energy crisis dominated economic outlook for Europe and Finland in 2022

The support measures taken in Finland to tackle the energy crisis have been moderate by international comparison.

The Bank of Finland emphasised that the support measures should be targeted more precisely at those households which are suffering the most. The measures should also be implemented in such a way that they do not adversely affect incentives for saving energy or slow the green transition.

In expressing its views in 2022, the Bank of Finland stressed the need for conditions to be in place for achieving economic growth that is sustainable. This can be done by raising education levels, introducing wide-ranging measures to develop the labour market and supporting research and innovation.

New research projects at the Bank of Finland dealt extensively with topics such as monetary policy transmission and inflation expectations. The activities of the Bank of Finland Institute for Emerging Economies (BOFIT) were very much shaped by the need for analysis of the economic impact of Russia's war in Ukraine.

Bank of Finland engages in close international cooperation

Economic and financial issues within the scope of central bank policies are cross-border in nature, so measures to address them call for close international cooperation.

Russia's war in Ukraine highlighted the importance of global cooperation in 2022.

After the need to hold meetings online during the COVID-19 pandemic, an increasing number of meetings in 2022 were once again held face-to-face.

Meetings of the International Monetary Fund (IMF) took on greater importance during the year as a forum for international cooperation. Global challenges, such as the food crisis, the energy crisis and climate change, require cross-border collaboration.

Bank of Finland's communications in 2022 highlighted the economic impacts of Russia's war in Ukraine and the energy crisis

Contingency preparations and continuity management have become increasingly important aspects of the work of the Bank of Finland.

The proactive research and analysis work carried out by the Bank of Finland proved its value after Russia invaded Ukraine, as the Bank gained a lot of media coverage of its expert opinions and forecasts for the Finnish economy.

The importance of the Bank of Finland's communications and the need for these to be reliable took on great significance in 2022, and the Bank attracted international attention for its analyses of the economic crisis caused by Russia's war in Ukraine.

The Bank of Finland assessed the economic impacts of the crisis during the year and actively communicated on its findings. In particular, experts from BOFIT made frequent appearances in the Finnish and international media.



Bank of Finland on domestic economic policy in 2022

In 2022, the Bank of Finland expressed its views on various matters including particularly the impact of the energy crisis on the Finnish economy and the assessment of related policy measures. As in previous years, the Bank of Finland also analysed the state of the economy, long-term economic growth prospects and issues in public finances, and took part in the domestic debate on economic policy.

The views expressed by the Bank of Finland on matters of domestic economic policy are based on the objectives set for the Bank by law and in the EU Treaties and also on its independent status.

The Bank of Finland's primary objective is price stability. The secondary objectives include supporting sustainable economic growth and promoting financial stability. The Bank of Finland provides topical, independent and research-based analysis and expertise for use by decision-makers and in Finnish society in general.

The views expressed by the Bank of Finland focus on identifying problems and challenges and assessing the effects of different policy alternatives. The Bank's views are presented in, for example, speeches by its Board members and comments and statements given in material published by the Bank.

Ukraine war and energy crisis dominated economic outlook in Europe and Finland in 2022 and fuelled uncertainty

The rise in energy prices has had a substantial impact on the euro countries' economies, because a significant proportion of the energy they consume is imported.

Overall, Finland is less dependent on imports of Russian energy than many other countries in the euro area. Finland's consumption of natural gas is also below the euro area average. Energy prices have therefore had less of an impact on inflation in Finland than elsewhere in the euro area. Moreover, expectations in the Nordic market regarding rising electricity prices have been more moderate than in the major euro area economies.

It remains a concern, however, that the long-term direction of Europe's energy policy is unresolved. The current situation differs widely among the countries of Europe in terms of their energy production and potential future solutions.

The support measures taken in Finland to tackle the energy crisis have been moderate by international comparison. The risk, however, is that these measures will raise the wholesale price of electricity and prove costly to the public finances, and without a commensurate benefit to households. If the support is too generous or is poorly targeted, it will impede the adjustment in demand and keep prices high in the longer term, in turn hampering the efforts of central banks to stabilise inflation at 2% over the medium term.

The Bank of Finland emphasised that the support measures should be targeted at those households which are suffering the most and should be implemented in such a way that they do not adversely affect incentives for saving energy or investments aimed at reducing energy consumption.

Strengthening the public finances will help prepare for growth in age-related expenditure

Economic policy in the past few years has been imbued with uncertainty as it has responded to the crises brought by the COVID-19 pandemic and Russia's war in Ukraine.

The swift and robust monetary and fiscal policy measures taken helped avoid a wave of bankruptcies while also supporting the favourable trend in employment and preventing a substantial contraction in household incomes.

On the other hand, this has also meant that Finland's general government debt ratio has grown significantly. Even before the pandemic, there was a significant structural problem in Finland's public finances. The Bank of Finland's latest estimate of the sustainability gap, published in December 2022, is approximately EUR 13 billion or 4% of gross domestic product (GDP).

The upward pressures on Finland's public debt stem from the imbalance between public revenue and expenditure. This imbalance will become more marked in the immediate years ahead due to growth in health and social services spending and public debt service payments.

After the crises it will be important to build confidence in fiscal sustainability. The public finances must be strengthened to ensure the financing of increasing levels of age-related and other essential expenditure. Safeguarding key services will require prioritisation, and a comprehensive knowledge base will be needed to support the necessary decision-making.

The aim should be longer term debt sustainability, and to achieve this a coherent economic adjustment programme should be drawn up. This will enable economic policy to support a stable and predictable operating environment and will allow the avoidance of sudden tightening later on.

Besides cutting expenditure and raising taxes, the economic adjustment programme should include reforms to improve the productivity of public services and the conditions for long-term economic growth.

Ensuring conditions for long-term economic growth

Labour productivity growth in Finland has been slower during the 2010s than in the other Nordic countries. The emphasis in investment has been on the building stock rather than on investing in areas that enhance labour productivity growth.

At the same time, the working-age population has begun to contract. A further significant factor in productivity growth is that the rise in young people's educational attainment has halted, and those born in the late 1970s remain for the time being the most highly educated generation.

All of these factors together are eroding the longer term growth outlook for the Finnish economy. In expressing its position on these matters, the Bank of Finland has emphasised that efforts must be made to alter the ongoing trend. This can be done by investing in education and training, in labour market development and in research and innovation.

Current levels of investment in boosting work-based immigration and promoting the integration of immigrants should be increased. Particular attention should be given to improving the opportunities for those foreign students who are taking higher education degrees in Finland to stay on and use their expertise to the benefit of Finnish society.

Economic policy governance should be developed to better support long-term management of general government finances

Finland's general government finances have been in deficit now for almost 15 years. In 2022, the Bank of Finland, in expressing its position, emphasised that Finland should return to the use of central government spending limits that will lead public finances closer to balance. For this it is vital to build a strong political commitment to fiscal sustainability and to the resolute implementation of the reforms this calls for.

The Bank of Finland also stressed that decisions on the reform of the EU's economic governance framework should be taken without undue delay. This way the fiscal rules could more strongly support the long-term management of the public finances and allow room for expansionary fiscal policies during economic recessions.



Energy crisis and high inflation darkened Finnish economic forecasts in 2022

Russia's invasion of Ukraine in 2022 cast a new veil of gloom over the outlook for Finland's economy. Due to the impacts of the war, Finland was forecast to enter a mild recession in 2023. The country's economic growth will be overshadowed by the energy crisis and high inflation in the immediate years ahead.

For monetary policy preparation and decision-making, the Eurosystem needs an informed view of the economic conditions and near-term outlook in its member countries. This necessitates independent and analytical assessment of the economy covering the immediate years ahead.

Each year, the Bank of Finland publishes four forecasts for the Finnish economy. Two of these, in June and December, are extensive forecasts drawn up in cooperation with the Eurosystem. A considerably more limited interim forecast is published in March and September.

The Bank of Finland's forecasts in 2022 dealt especially with Russia's war in Ukraine, the energy crisis exacerbated by the war and the surge in inflation. The acute energy crisis and the sharp rise in inflation dampened Finland's growth outlook.

The outbreak of this war in Europe hindered the post-pandemic economic recovery and brought significant uncertainty to economic forecasts.

In the course of 2022, forecasts were revised downwards substantially, particularly in respect of growth for 2023.

March interim forecast drawn up amid high uncertainty

Russia's invasion of Ukraine in February 2022 sparked very high uncertainty about the economy, because the extent and duration of the war were unknown factors.

In the March interim forecast, the Bank of Finland emphasised that Russia's invasion of Ukraine had significantly altered the outlook for Finland's GDP growth in the near term and that it brought great uncertainty to the economy.

Finland's foreign trade with Russia shrank sharply as a result of the war. It was considered that the war's economic impact would be prolonged if it were to take time to find replacements for lost Russian markets.

Due to the high level of uncertainty, the Bank of Finland's March interim forecast was drawn up with two separate economic scenarios. In both scenarios, Russia's war in Ukraine adversely affected Finland's GDP growth and pushed up inflation.

The more favourable scenario was based on the assumption that the rise in inflation and the weakening of export demand would remain moderate and the economy would adjust fairly quickly after the initial shock. In this scenario, GDP was forecast to grow by 2% in 2022 and by 1.5% in 2023 (Table 10).

The less favourable scenario, in turn, assumed that the war would drag on, the Russian economic crisis would deepen and the adjustment in the Finnish economy would be slow. In this scenario, Finland's GDP was forecast to grow by about 0.5% in both 2022 and 2023. Inflation would rise to 5% in 2022 and then fall to 3% in 2023.

June forecast indicated Russia's war in Ukraine would stifle Finland's economic recovery

In its June forecast, the Bank of Finland noted that Finland's foreign trade with Russia had collapsed as a result of the war. Increased uncertainty and rising prices were undermining economic growth.

The forecast suggested that inflation would be driven up further by higher raw material and energy prices and the supply-side bottlenecks exacerbated by the war. Greater economic uncertainty would diminish the prospects for consumption and investment. Moreover, the high level of inflation would curb growth in private consumption and erode households' purchasing power.

The Bank's June forecast projected that Finland's economic growth would be between the figures presented in the two March scenarios. The economy was forecast to grow by 1.7% in 2022, but growth would slow to 0.5% in 2023 due to the impacts of the war. Growth would then pick up to 1.5% in 2024, as the difficulties in the global economy subsided and inflation moderated. The forecast assumed that the impacts of the war and the pandemic would gradually subside.

The June forecast stressed that Finland's economic growth might turn out to be lower than projected, and even a recession could not be ruled out. Inflation might climb higher than forecast, and the increase in market rates might be faster than assumed.

In spite of the many downside risks, the forecast suggested that more positive outcomes were also possible. Both exports and domestic demand could pick up by more than anticipated if companies are able to adjust quickly and find new markets to replace those lost.

September interim forecast expected energy crisis to shrivel economic growth towards end of 2022

The Bank of Finland's September interim forecast drew particular attention to the fact that the energy crisis and inflation had increased the risk of a recession. The Finnish economy was expected to contract slightly in 2023. The faltering economy was also signalling an end to the favourable employment trend.

The September interim forecast emphasised that the exceptionally high inflation was diminishing households' purchasing power and that consumer confidence had sunk to a very low ebb, curbing private consumption. The upward pressures on consumer prices were not to subside until 2023, when the rise in energy prices would slow.

Finland's economic growth was revised upwards for 2022, but downwards for 2023 and 2024. The Finnish economy was projected to grow by 2.2% in 2022, following the strong start to the year, and to contract by 0.3% in 2023. Growth would return to just over 1% in 2024, close to the economy's estimated long-term potential growth rate.

As with the previous forecasts, there were substantial uncertainties associated with the September interim forecast. The most prominent of these concerned the path to be taken by the energy crisis in Europe. There was also substantial uncertainty surrounding the inflation forecast. A prolonged high inflation rate would weaken households' purchasing power more than predicted.

December forecast suggested the Finnish economy would slide into recession

The extensive December forecast suggested that the Finnish economy would slide into a mild recession in 2023 in response to the energy crisis exacerbated by Russia's war in Ukraine and the surge in the cost of living.

A steeper contraction in Finland's economy was forecast for 2023 compared with the September forecast. The recession was estimated to be short-lived, however, and the economy was projected to slowly start growing again in 2024 as the energy crisis eased and uncertainty receded. Exports would also help drive economic growth once Finland's export markets began to pick up.

Finland's real GDP was projected to contract by 0.5% in 2023 and to rebound to 1.1% in 2024. In 2025, growth would pick up to close to its potential rate, i.e. to 1.5%.

The forecast suggested that the loss of momentum in economic growth was widespread across the economy. High inflation had eroded purchasing power, and consumer confidence had slumped to a very low level. Uncertainty was impacting private consumption and investment demand.

In the December forecast, the Bank of Finland paid particular attention to the trend in the labour market. The stalling of Finland's economic growth and the decline in companies' employment expectations would also reverse the favourable situation on the labour market. Employment growth would slow, causing a temporary rise in the unemployment rate. Employment would nonetheless remain good, given the brief duration of the recession and the structural nature of the labour shortage in many sectors.

Inflation was estimated to slow in the immediate years ahead, due to the easing of supply chain bottlenecks, the impact of monetary policy tightening and the weakening of domestic demand.

The December forecast also projected that the rise in the inflation rate would be slowed by a decline in the prices of crude oil and raw materials, but high electricity costs would keep price pressures high especially during the ensuing winter months. Some of the accumulated cost pressures would transfer to the prices of food, consumer goods and services after a time lag.

The risks surrounding the December forecast were predominantly on the downside. The outlook in Finland's export markets continued to be uncertain due to the war in Ukraine. At the end of 2022, uncertainty surrounding the economy was still very high, although it had dissipated to some extent during the year. The worst concerns about the widening of the war and the availability of energy had faded somewhat.

Table 10.

Bank of Finland's forecasts in 2022	2022	2023	2024	2025
March interim forecast				
- Scenario 1: favourable GDP growth	2,0%	1,5%	-	-
- Scenario 2: weak GDP growth	0,5%	0,5%	-	-
June forecast	1,7%	0,5%	1,5%	-
September interim forecast	2,2%	-0,3%	1,1%	-
December forecast	1,9%	-0,5%	1,1%	1,5%
Source: Bank of Finland.				

Preparation of forecasts relies on forecasting models and analyses

The Bank of Finland prepares its forecasts and the related alternative scenarios using the Aino 2.0 model, which was developed to simulate the Finnish macroeconomy. A further version of the model – Aino 3.0 – is also used extensively in drawing up analyses and alternative scenarios.

Continued development work on the forecasting models and related data systems and tools is an integral part of the preparation of forecasts for the Finnish economy



Aino models capture main elements of the Finnish macroeconomy

The Bank of Finland uses various economic and statistical models for forecasting and analytical work. [Aino 2.0](#) and [Aino 3.0](#) are macroeconomic models of the Finnish economy. They are dynamic stochastic general equilibrium (DSGE) models, which are particularly suited for the analysis of business cycle fluctuations.

Both Aino models updated in 2022

The Bank of Finland introduced the Aino 2.0 model in 2016. The model is used for producing the Bank of Finland's economic forecasts and examining different scenarios.

The Aino 3.0 model, based closely on Aino 2.0, models more precisely the household sector, household debt and the housing market.

The Bank of Finland began the development of Aino 3.0 in 2017, and the first version was completed in 2020. Since then, work has continued on developing both versions of the model.

In 2022, the structure of Aino 2.0 was updated and its parameters were re-estimated so that it would better capture business cycle dynamics in the Finnish economy. A corresponding updated version of Aino 3.0 was also introduced.

Aino 3.0 enables more precise analysis of linkages between real and financial sides of the economy

The Aino 3.0 model expands the toolkit used at the Bank of Finland for cyclical and policy analysis. It enables a more precise analysis of the linkages between Finland's real economy and the financial system.

Aino 3.0 provides a tool for examining, among other things, the implications of household debt for business cycle dynamics, or the channels of transmission of the European Central Bank's monetary policy to the Finnish economy. The model can also be used to analyse, for example, the effects of tighter bank credit standards on investment and economic growth in Finland.

In 2022, Aino 3.0 was employed to produce the [alternative scenario](#) that was published in connection with the Bank of Finland's December economic forecast. The alternative scenario examined the risks surrounding the forecast which, if they were to materialise, could lead economic growth to be considerably weaker than expected.

The scenario was used for estimating the extent to which household sector indebtedness could deepen the recession if the cost of living and interest rates were to rise faster than expected.

In support of its forecasts, the Bank published a number of reviews and articles about the Finnish economy on the [Bank of Finland Bulletin](#) website. Many of these concerned the economic impacts of Russia's war in Ukraine and the related energy crisis and surge in inflation. Further topics included Finland's public finances and cost competitiveness.

In connection with its forecasting and monitoring work, the Bank also publishes an [economic review \(in Finnish\)](#) on its publications website.

The economic review examines the most recent data on the Finnish economy and looks at the latest indicators. It also presents GDP forecasts generated by short-term indicator models. In 2022, the Bank of Finland started presenting these economic reviews in the form of a concise set of slides.



Research at the Bank of Finland in 2022

Many of the research contributions from the Bank of Finland were published in leading economics and finance journals in 2022. New research projects dealt extensively with topics such as monetary policy transmission and inflation expectations. Because of Russia's war in Ukraine, the activities of the Bank of Finland Institute for Emerging Economies (BOFIT) in 2022 were shaped by the need to provide up-to-date analysis and communication.

Research at the Bank of Finland supports the preparatory work on monetary policy in a variety of ways and helps to gain a better understanding of the transmission of monetary policy.

A good example of the Bank of Finland's research contribution in this area is the research article in English entitled '[IQ, Expectations, and Choice](#)' by Francesco D'Acutto, Daniel Hoang, Maritta Paloviita and Michael Weber, which examined the [impact of cognitive abilities on the formation of consumers' inflation expectations and consumption plans](#). The article was published in the influential *Review of Economic Studies*.

In 2022, analysis of the economic consequences of Russia's war in Ukraine took a significant role in the activities of the Bank of Finland Institute for Emerging Economies (BOFIT).

There was a very high demand for research-based information and reasoned opinions in 2022, not only in Finland but also globally. In addition, the scope of BOFIT's activities was expanded during the year to cover monitoring and analysis of developments in the global economy.

Bank of Finland discussion papers in 2022

The Bank of Finland Research Discussion Papers, which are all published in English, covered, in 2022, topics such as the [impact of monetary policy on income and wealth distributions](#) (Petri Mäki-Fränki, Aino Silvo, Adam Gulan and Juha Kilponen), credit risk and liquidity margins on [euro area sovereign bonds](#) (Juuso Nissinen and Markus Sihvonen) and the [long-term scarring effects](#) of deep recessions (David Aikman, Mathias Drehmann, Mikael Juselius and Xiaochuan Xing). Michaela Elfsbacka-Schmöller studied the effects of [fiscal policy](#), and (together with Martin Spitzer) of [monetary policy](#), on long-term growth. Other themes included public funding of banks and companies in a time of [crisis](#) (Markus Haavio, Antti Ripatti and Tuomas Takalo), economic [expectations](#) during the pandemic (Gene Ambrocio and Iftekhar Hasan) and [economic researchers' views](#) on the objectives of monetary policy (Gene Ambrocio, Andrea Ferrero, Esa Jokivuolle and Kim Ristolainen).

Research papers published under the BOFIT Policy Brief series and the English-language BOFIT Discussion Paper series examined, among other things, the [relationship between elections and bank licence withdrawals in Russia](#) (Zuzana Fungáčová, Alexei Karas, Laura Solanko and Laurent Weill) and [Russia's government budgets](#) (Vesa Korhonen).

A number of the research papers that were published in English under the BOFIT Policy Brief series covered the various effects of economic sanctions and Russia's war in Ukraine. The topics discussed included [Russia's economic integration with the rest of the world](#), the [impact of trade sanctions in Russian production](#) and [Russia's technology imports from Asia](#).

Publications in the BoF Economics Review series in 2022

The research contributions published under the [BoF Economics Review series](#) covered topics such as the effects of [age and cohort](#) and of [low interest rates](#) on saving, the slowing pace of growth in [Finnish exports](#), forecasting of [household loan stocks](#), [optimal bank capital requirements](#) and [restrictions on capital flows](#).

Bank of Finland's peer-reviewed research articles in international journals in 2022

High-quality research increases the Bank of Finland's impact and the interest shown towards it as a potential partner, both in Finland and internationally. Quality is measured by the number of research contributions published in recognised peer-reviewed economics and finance journals.

In addition to the previously mentioned article published in *Review of Economic Studies*, below are further examples of the Bank's peer-reviewed research articles which were published in English in international journals in 2022.

Joseba Martinez, Thomas Philippon and Markus Sihvonen's article entitled '[Does a currency union need a capital market union](#)' was published in the *Journal of International Economics*.

Juha Kilponen, Jouko Vilmunen and Oskari Vähämaa's article '[Revisiting intertemporal elasticity of substitution in a sticky price model](#)' was published in the *Journal of Economic Dynamics and Control*.

Claudio Borio, Piti Disyatat, Mikael Juselius and Phurichai Rungcharoenkitkul's article '[Why So Low for So Long? A Long-Term View of Real Interest Rates](#)' was published in the *International Journal of Central Banking*.

Denis Davydov, Jukka Sihvonen and Laura Solanko's article '[Who cares about sanctions? Observations from annual reports of European firms](#)' was published in *Post-Soviet Affairs*. The article analysed the impact of sanctions on European firms.

Satu Nurmi, Juuso Vanhala and Matti Virén's article on zombie firms and entitled '[Are zombies for real? Evidence from zombie dynamics](#)' was published in the *International Journal of Industrial Organization*.

Zuzana Fungáčová, Eeva Kerola and Laurent Weill's article '[Does bank efficiency affect the bank lending in China?](#)' was published in *Emerging Markets Review*. The article examined monetary policy transmission in China.

Presentation of Bank of Finland research to stakeholders

Bank of Finland research findings were presented in 2022 in a large number of Eurosystem network meetings and at international and domestic events.

Experts from the Bank of Finland presented, in English, a number of columns on the VoxEU platform and articles in the SUERF (European Money and Finance Forum) [Policy Briefs](#) series.

Bank of Finland's domestic and international meetings in 2022

In August, the Bank of Finland organised a session on the theme 'Financial literacy, household finance and beliefs' in connection with the 2022 Annual Meeting of the Central Bank Research Association (CEBRA) in Barcelona. The Bank also co-organised a workshop entitled '[Workshop on Banking and Institutions](#)' with the University of Strasbourg and Fordham University.

In September, the Bank of Finland co-hosted a hybrid conference entitled 'Monetary Policy in the Post-Pandemic Era' with the Centre for Economic Policy Research (CEPR).

In October, BOFIT co-organised an international conference entitled '[Debt and Innovative Finance in Developing Countries](#)' with the United Nations University World Institute for Development Economics Research (UNU-WIDER).

The Bank of Finland also organised a large number of short research seminars in 2022. These seminars were predominantly held in hybrid format.



Bank of Finland’s international cooperation in 2022

Economic and financial issues within the scope of central bank policies are cross-border in nature, so measures to address them call for close international cooperation. After the need to hold meetings online during the COVID-19 pandemic, an increasing number of meetings in 2022 were held face-to-face.

The Eurosystem is the Bank of Finland’s most important network for cooperation.

The Bank of Finland also participates in the work of many international and European institutions and committees and cooperates with the national central banks of other countries.

Chart 23.

The Bank of Finland is a respected international influencer and partner



Source: Bank of Finland.

The Bank of Finland is represented in a number of bodies of the European Central Bank (ECB) and the EU and in other international forums. [A list of these positions can be found on the Bank of Finland's website.](#)

Bank of Finland responsible for Finland's relations with International Monetary Fund

The International Monetary Fund (IMF) is an organisation of 190 member countries that works to foster international cooperation, open and rules-based foreign trade, sustainable economic growth and financial stability.

The Governor of the Bank of Finland, **Olli Rehn**, is Finland's representative on the highest governing body of the IMF, the Board of Governors.

The Bank of Finland also influences the activities of the IMF via its role in the IMF's Nordic-Baltic Constituency (NBC), which has a joint representative on the IMF Executive Board. **Mika Pösö's** three-year term in this position expired at the end of 2022.

The countries of the NBC agree policy positions on topics discussed by the IMF Executive Board. In 2020–2022, the lead role in preparing the policy positions was held by Finland. This preparatory work was carried out in collaboration between the Bank of Finland and the Ministry of Finance.

The activities of the NBC are guided by the Nordic-Baltic Monetary and Financial Committee (NBMFC). The Deputy Governor of the Bank of Finland, **Marja Nykänen**, is a member of the Committee.

IMF meetings are important forums for international cooperation

After holding meetings online during the COVID-19 pandemic, the IMF's Spring and Annual Meetings in Washington DC were once again held in-person, and the Bank of Finland was among the attendees.

The meetings of the IMF's International Monetary and Financial Committee (IMFC) were also held in conjunction with the Spring and Annual Meetings, which are important forums for international economic cooperation.

The IMFC discussed the global economic outlook, international financial stability and topical economic policy challenges. Russia's invasion of Ukraine was widely condemned.

Kristalina Georgieva, Managing Director of the IMF, emphasised in her contributions at the Spring and Annual Meetings the need for decisive policy action and unity among the international community. She also discussed the uncertainty of the economic outlook, the increasingly shock-prone world and the complexity of the policy landscape. Tackling global challenges, such as the food crisis, the energy crisis and climate change, will rely on international cooperation.

Bank of Finland participates in work of EU institutions and committees

The Bank of Finland is a member of the EU's Economic and Financial Committee (EFC). The EFC has been set up to promote economic policy coordination among EU Member States and to participate in the preparatory work for the EU's Economic and Financial Affairs Council, commonly known as the Ecofin Council.

In 2022, the EFC convened 13 times in its full composition, i.e. with national central banks.

At these meetings, the EFC discussed, among other things, the economic and financial consequences of Russia's war in Ukraine, energy pricing, the energy derivatives markets, sanctions on Russia, financing packages for Ukraine and the economic and financial impact of climate change.

The EFC also prepared joint positions for international meetings.

The Bank of Finland also participates in the work of many EU committees and EU bodies promoting the stability of the banking and the financial system. The European Systemic Risk Board (ESRB) is among the most important of these. The Governor of the Bank of Finland is a member of the General Board of the ESRB.

In 2022, the ESRB's General Board discussed, among other things, the impact of Russia's war in Ukraine on the financial markets and financial stability risks, and reviewed, for example, the vulnerabilities and resilience of the EU financial system. It also discussed the macroprudential policies and measures of the EU countries.

Bank for International Settlements promotes central bank cooperation and dialogue

The Governor of the Bank of Finland participates in the regular meetings of the governors of the member central banks of the Bank for International Settlements (BIS).

These meetings discuss developments and current issues relating to the global economy and the financial markets, and matters of interest to central banks.

Bank of Finland cooperates with other Nordic central banks

The Bank of Finland maintains close contacts with the central banks of the other Nordic countries. Nordic central bank governors convene annually to discuss topical issues.

In 2022, the governors convened in November in Oslo. They discussed, among other things, inflation-related topics and the security of payment systems.

The deputy governors, in turn, convened in April in Reykjavik and in December in Oslo.

Cooperation between Nordic central bank experts is also furthered regularly in various meetings covering a wide array of different departmental activities.



Bank of Finland's communications in 2022 highlighted the economic impacts of Russia's war in Ukraine and the energy crisis

The Bank of Finland's communications in 2022 included a strong focus on reader-friendly texts and the central role of experts. The Bank's staff also adopted new hybrid working practices. In January 2022, the new Financial Literacy Centre was opened at the Bank of Finland Museum with the purpose of implementing the national strategy for promoting financial literacy.

The importance of the Bank of Finland's communications and the need for these communications to be reliable took on great significance in 2022. The Bank's analyses of the economic crisis caused by Russia's war in Ukraine attracted international attention. In addition, a report was commissioned which concluded that the Bank had coped well with the two-year COVID-19 pandemic.

The report examined the work of the crisis organisation that had been set up during the pandemic. It was completed at the end of 2022. According to the report, the Bank of Finland's COVID-19 crisis communications were performed successfully, at a sufficient level and on a multi-channel basis.

Regular and focused communications added to the staff's sense of safety and security during the pandemic. Other key successes mentioned in the report were the prompt setting up of the crisis organisation and securing of uninterrupted operations, the attention given to the health security of the staff, and the rapid switch to working remotely from home.

Bank of Finland examined and analysed economic impacts of Russia's war in Ukraine and provided information to an international audience

Contingency preparations and continuity management have become increasingly important aspects of the work of the Bank of Finland and are also reflected in the Bank's strategic objectives for the coming years. At national level, the Bank of Finland participates in ensuring operational continuity in the financial sector in cooperation with operators in the sector and other public authorities.

Russia's invasion of Ukraine in February 2022 marked the start of an unusual period at the Bank of Finland, as the focus shifted from examining economic outlooks and post-pandemic challenges to studying and analysing the economic implications of the war.

The impacts of the war quickly reverberated throughout the global economy. The energy crisis brought by the war halted Finland's economic growth and pushed up inflation. Central banks sought to respond to the surge in inflation by tightening monetary policy and raising interest rates.

The Bank of Finland assessed the economic impacts of the crisis during the year and actively communicated on its findings. In particular, experts from the Bank of Finland Institute for Emerging Economies (BOFIT) made frequent appearances in the Finnish and international media.

The Bank of Finland website has a [designated page for material published by the Bank concerning the economic impact of the war](#).

Bank of Finland provides topical, independent and research-based information for the general public

In 2022, the aim of the Bank of Finland's communications was to publish accessible, diverse and tailored content in all channels used by the Bank. Reader friendly content included brief summaries, visualisations and short videos.

Key themes of the Bank of Finland's communications in 2022 were the economic impact of Russia's war in Ukraine and ensuring payment systems in Finland can function under all circumstances.

Other themes in the Bank's external communications included the tightening of monetary policy by the European Central Bank (ECB), the increase in daily household expenditure due to surging inflation and sharply rising energy prices, and the impact of rising interest rates on mortgage borrowers.

The Bank of Finland's experts took an active role in communication in 2022, writing a total of 55 blog posts. By the end of the year, about a quarter of the Bank's staff had joined the [Twitter group for experts working at the Bank of Finland](#).

Participation by Bank of Finland experts in the discussions on social media has strengthened the Bank's position as a credible and dependable organisation.

The active role of Bank of Finland staff members helped ensure the Bank's messages were widely read in social media and understood as efforts to share accurate information and support the work of colleagues.



The Bank of Finland provided up-to-date, independent and research-based data on the wider economic impact of Russia's war in Ukraine.

Bank of Finland's role as reliable information source highlighted during crises

The active efforts which the Bank of Finland has made during non-crisis times to provide reliable and independent information have resulted in considerable interest being shown during times of crisis towards the information provided by the Bank's experts and in its published material.

The proactive research and analysis work carried out by the Bank of Finland proved its value after Russia invaded Ukraine, as the Bank of Finland gained a lot of media coverage of its expert opinions and forecasts for the Finnish economy.

During the first month of Russia's invasion, the Bank of Finland was mentioned in a total of 53 editorials, columns or journalists' comments related to the war.

The Bank of Finland updated the look and features of the [Bank of Finland Bulletin](#) website based on a user survey, stakeholder interviews and observations made by staff experts.

The new-look website was launched at the end of 2022 and will meet users' needs more effectively. The changes made also improve the usability and accessibility of the website. The visual design of the site was also updated.

Chart 24.

Bank of Finland communications in 2022 included a strong focus on reader-friendly texts and the central role of experts



Source: Bank of Finland.

Bank of Finland's internal communications in 2022 highlighted hybrid working challenges and the security environment

In 2022, the Bank of Finland adjusted to a new kind of work culture, as the staff learned new ways of working in a hybrid working environment.

[Attention to the wellbeing of staff, their ability to cope at work](#) and a safe working environment all featured prominently in the Bank's internal communications.

The Bank of Finland's staff have played an important role in building everyday safety and security. An internal campaign on everyday safety and security that started at the end of 2021 and lasted throughout 2022 clearly increased staff knowledge concerning a safe working environment and their information security skills.

During the campaign, internal communications focused on such matters as the safe use of social media and online sites, the principles of responsible communications, and information influence activities. Based on a survey completed at the end of the campaign, the staff's own experience of working safely and securely had improved.

Open Doors event brought together culture, history and people

At the end of September and start of October 2022, the Bank of Finland held an Open Doors event in the Bank's main building and in the Bank of Finland Museum.

The main themes of the event were art and history, money and payments and financial literacy. Information on these themes was displayed in the main building and at the Museum.

Before the official Open Doors event, the Bank of Finland organised a family day for staff and their families and friends to view the exhibits. Separate events were also organised for stakeholders.

Alongside the art exhibition, experts from the Bank presented briefings on topical matters, such as phishing and the sanctions related to Russia's war in Ukraine. For children at the event, the Bank also organised an art workshop and a creative opportunity using shredded banknotes, as well as a look at banknote security features.

The three-day Open Doors event for the public attracted a total of about 5,100 visitors. Feel free to revisit the Open Doors event on the [Bank of Finland's Flickr account](#).

Financial Literacy Centre opened at the Bank of Finland Museum in 2022

In 2022, the Bank of Finland continued its work aimed at promoting the level of financial literacy among the general public.

The most significant step forward in this was the opening of the [Financial Literacy Centre](#) at the Bank of Finland Museum in January 2022. The opening took place virtually. Speakers at the event were Minister of Finance Annika Saarikko and Bank of Finland Governor Olli Rehn.

The Financial Literacy Centre has attracted great interest both within and outside Finland. The Centre's work at the Museum focuses on promoting people's financial literacy and supporting the national strategy on financial literacy, which is under the direction of the Ministry of Justice.

Bank of Finland's financial literacy role well known internationally too

The Bank of Finland is Finland's only full member of the OECD/INFE, which is the Organisation for Economic Co-operation and Development's International Network on Financial Education.

The OECD/INFE meetings offer useful insight into various strategies for financial literacy in different countries and on international research and measuring financial literacy.

In January 2022, the European Commission and OECD/INFE published [a joint financial competence framework for adults](#). Similar frameworks are being drawn up for children and youth.

Bank of Finland Museum reactivated after pandemic

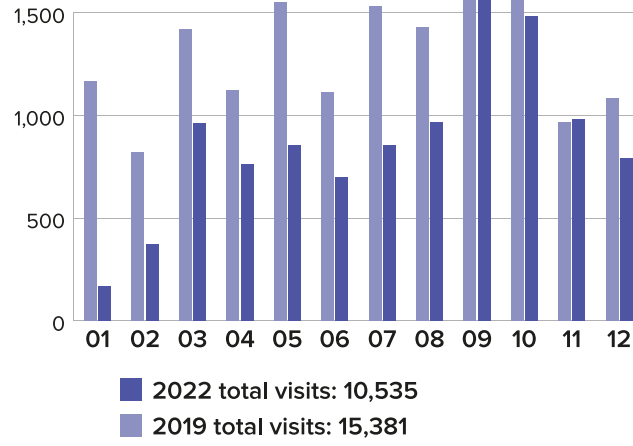
Over the course of 2022, the Bank of Finland Museum sprang back into life after the pandemic, and its visitor numbers picked up as each month passed.

At the end of the year, the number of visitors finally reached the long-term average, which is more than 10,000 visitors. The Museum's up-to-date guided tours attracted a large number of reservations.

In 2022, the Museum's public lectures were held in hybrid form and mainly attended online. The online coverage of the lectures has improved their accessibility.

Chart 25.

Monthly visits to Bank of Finland Museum reached pre-pandemic levels in late 2022



Source: Bank of Finland.



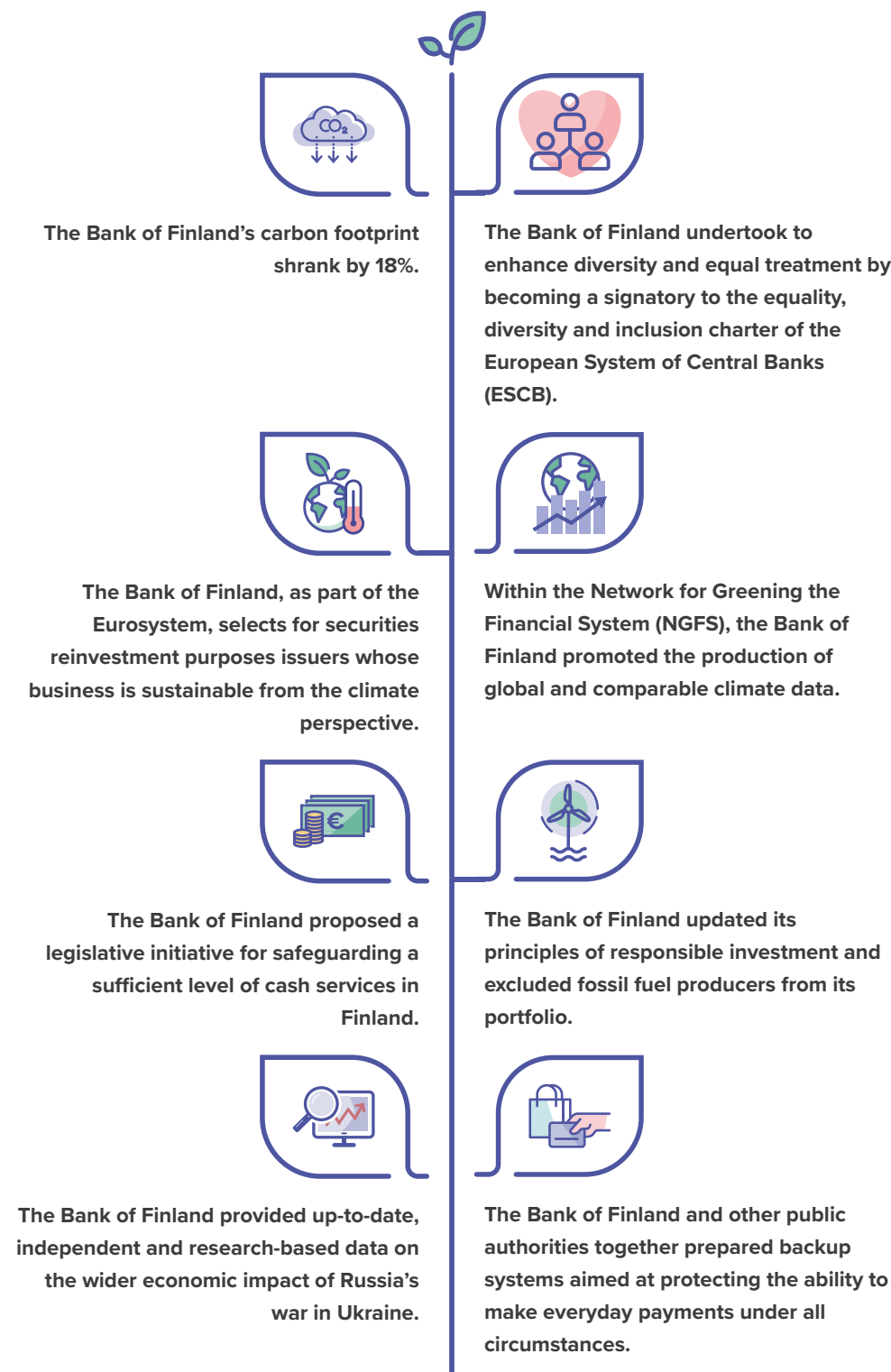
Sustainability work means concrete everyday actions

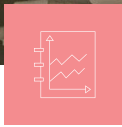
The Bank of Finland's sustainability work in 2022 included the provision of up-to-date, independent and research-based data on the wider economic impact of Russia's war in Ukraine, and active work to further develop the Bank's responsible investment activities.

The Bank of Finland reported, in its Annual Report and other publications and reports, on the implementation of the goals set in its sustainability programme.

The Bank's [sustainability programme](#) focuses on promoting sustainable growth and wellbeing, influencing policy and debate through information provision and active engagement, and managing climate risks.

Sustainability at the Bank of Finland: key examples





Financial Statements

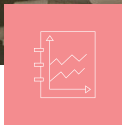
The Bank of Finland's audited profit for the financial year 2022 totals EUR 0.00 after adjustments to provisions. The foreign exchange rate and price difference provision was adjusted downwards by EUR 165 million to cover the valuation losses on financial assets arising mainly from the fall in the market value of dollar-denominated securities. A reduction of EUR 47 million in the general provision was also made, to cover the negative operating profit.

The rise in interest rates has reduced the Bank of Finland's profit. The Bank had already prepared for higher interest rates by strengthening its risk provisions when interest rates were low. In the immediate years ahead, there will be a further need to use risk provisions, as the profit outlook is weak.

During the COVID-19 crisis, the Eurosystem expanded asset purchases and granted longer term, favourable loans to banks. This further boosted the Bank of Finland's balance sheet. A central bank's financial result reflects the particular central banking tasks it has had to undertake, and making a profit is not the primary goal of its activities.

The Bank of Finland has acquired bonds through the asset purchase programmes, and a considerable proportion of these are issued by Finland's public sector, and are long-term and fixed-rate. They have been financed using liquidity deposits of commercial banks, which are remunerated at the European Central Bank's deposit facility rate. The different interest rate linkage for assets and liabilities poses a structural interest rate risk for the Bank of Finland's balance sheet.

In 2022, the ECB began a series of interest rate hikes because of the excessively high level of inflation. This has increased the interest payments payable on commercial banks' deposits and has therefore directly reduced the Bank of Finland's net interest income. The net interest income in 2022 amounted to EUR 459 million, which was almost EUR 200 million less than in 2021.



Balance sheet

31.12.2022

EUR million		31 Dec 2022	31 Dec 2021
ASSETS			
1	Gold and gold receivables	2,690	2,537
2	Claims on non-euro area residents denominated in foreign currency	12,430	12,180
	Receivables from the International Monetary Fund (IMF)	5,314	5,016
	Balances with banks and security investments, external loans and other external assets	7,116	7,164
3	Claims on euro area residents denominated in foreign currency	172	360
4	Claims on non-euro area residents denominated in euro	–	–
5	Lending to euro area credit institutions related to monetary policy operations denominated in euro	30,096	36,113
6	Other claims on euro area credit institutions denominated in euro	16	0
7	Securities of euro area residents denominated in euro	95,900	90,001
	Securities held for monetary policy purposes	95,745	89,825
	Other securities	156	176
8	Intra-Eurosystem claims	47,769	33,983

EUR million		31 Dec 2022	31 Dec 2021
	Participating interest in ECB	188	177
	Claims equivalent to the transfer of foreign reserves	741	741
	Net claims related to the allocation of euro banknotes within the Eurosystem	8,010	8,263
	Other claims within the Eurosystem (net)	38,830	24,802
9	Other assets	737	608
	Coins of euro area	41	38
	Tangible and intangible fixed assets	87	92
	Other current assets	33	34
	Sundry	577	444
Total assets		189,811	175,782

Totals/sub-totals may not add up due to rounding.

EUR million		31 Dec 2022	31 Dec 2021
LIABILITIES			
1	Banknotes in circulation	26,567	26,100
2	Liabilities to euro area credit institutions related to monetary policy operations denominated in euro	138,697	124,607
	Current accounts (covering the minimum reserve system)	4,684	101,054
	Deposit facility	134,013	23,553
3	Other liabilities to euro area credit institutions denominated in euro	354	306
4	Liabilities to other euro area residents denominated in euro	1,733	2,708
5	Liabilities to non-euro area residents denominated in euro	5,891	5,388
6	Liabilities to euro area residents denominated in foreign currency	–	–
7	Liabilities to non-euro area residents denominated in foreign currency	–	–

EUR million		31 Dec 2022	31 Dec 2021
8	Counterpart of special drawing rights allocated by the IMF	4,381	4,326
9	Intra-Eurosystem liabilities	–	–
10	Other liabilities	522	448
11	Revaluation accounts	3,628	3,623
12	Provisions	5,095	5,309
13	Capital and reserves	2,941	2,915
	Primary capital	841	841
	Reserve fund	2,100	2,074
14	Profit for the year	–	52
Total liabilities		189,811	175,782

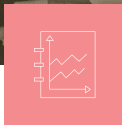
Helsinki, 28 February 2023

THE BOARD OF THE BANK OF FINLAND

Olli Rehn, Governor

Marja Nykänen, Deputy Governor

Tuomas Välimäki, Member of the Board



Profit and loss account

31.12.2022

EUR million	1 Jan–31 Dec 2022	1 Jan–31 Dec 2021
1 Interest income	1,125	981
2 Interest expense	-666	-323
3 NET INTEREST INCOME	459	658
4 Foreign exchange rate differences	59	5
5 Securities price differences	19	44
6 Valuation losses related to currencies and securities	-244	-28
7 Change in foreign exchange rate and price difference provision	165	-21
NET RESULT OF FINANCIAL OPERATIONS, WRITE-DOWNS AND RISK PROVISIONS	458	658
8 Income and expenses on fees and commissions	-6	-5
9 Net result of pooling of monetary income	-422	-483
10 Share in ECB profit	1	7
11 Income from other equity shares and participating interests	4	9
CENTRAL BANKING PROFIT	35	186
12 Other income	44	44

EUR million		1 Jan–31 Dec 2022	1 Jan–31 Dec 2021
	Operating expenses	-126	-120
13	Staff costs	-62	-61
14	Pension fund contribution	-10	-10
15	Administrative expenses	-38	-35
16	Depreciation of fixed assets	-10	-9
17	Banknote production services	-6	-5
18	Other expenses	-0	-0
	OPERATING PROFIT	-47	110
	Profit for the pension fund	–	–
19	Income of the pension fund	31	31
20	Expenses of the pension fund	-31	-31
21	Changes in provisions	47	-58
22	PROFIT FOR THE YEAR	–	52

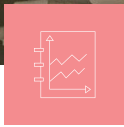
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THE BOARD OF THE BANK OF FINLAND

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Accounting policies

31.12.2022

1. General accounting policies

The Bank of Finland observes the economic-based accounting principles and techniques adopted by the Governing Council of the ECB, and the Bank's annual accounts are drawn up in accordance with these harmonised principles. In accordance with section 11 of the Act on the Bank of Finland, the Parliamentary Supervisory Council confirms, on the proposal of the Board, the principles applied in drawing up the annual accounts.

The Bank of Finland's profit and loss account also comprises income and expenses of the Bank's pension fund and of the Financial Supervisory Authority. The ECB guideline on accounting and financial reporting does not regulate accounting for the pension fund.

2. Revaluation of items denominated in foreign currency and gold

Items denominated in foreign currency and gold are converted into euro at the exchange rate prevailing on the balance sheet date. Foreign currency-denominated items are revaluated on a currency-by-currency basis. Revaluation differences related to foreign exchange rate movements and securities price movements are treated separately. Unrealised gains are recorded in revaluation accounts. Unrealised losses are taken to the profit and loss account if they exceed previous corresponding unrealised revaluation gains registered in the revaluation accounts. Unrealised losses taken to the profit and loss account are not reversed against any future unrealised gains in subsequent years. No distinction is made between the price and currency revaluation differences for gold. Instead, a single gold valuation is made. Realised gains and losses related to foreign exchange rate movements during the financial year are calculated on the basis of the daily net average cost method. The exchange rates used in the financial statements are presented in the following table.

Currency	31 Dec 2022	31 Dec 2021
US dollar	1.0666	1.1326
Japanese yen	140.6600	130.3800
Swedish krona	11.1218	10.2503
Swiss franc	0.9847	1.0331
Pound sterling	0.8869	0.8403
Canadian dollar	1.4440	1.4393
Special Drawing Rights (SDR)	0.7989	0.8091
Gold	1,706.0750	1,609.4830

3. Valuation and amortisation of securities

Income and expenses are recognised in the period in which they are earned or incurred. Realised income and expenses are entered in the profit and loss account. The difference between the acquisition price and nominal value of debt securities is entered as income or expense over the maturity of the security. Gains and losses related to movements in the prices of debt securities are calculated on the basis of the average cost method.

Unrealised gains are recorded in revaluation accounts. Unrealised losses are taken to the profit and loss account if they exceed previous corresponding unrealised revaluation gains registered in the revaluation accounts. Unrealised losses taken to the profit and loss account are not reversed against any future unrealised gains in subsequent years. Both euro-denominated and foreign currency-denominated securities are valued on a security-by-security basis. If unrealised losses are entered in the profit and loss account in respect of a security or a currency, the average price of the security or the net average rate of the currency is adjusted correspondingly before the beginning of the next financial year.

Reverse repurchase agreements, or reverse repos, are recorded as collateralised outward loans on the assets side of the balance sheet. Repurchase agreements, or repos, are recorded as collateralised inward deposits on the liabilities side of the balance sheet. Securities sold under repurchase agreements remain on the Bank's balance sheet.

Securities held for monetary policy purposes

Debt securities currently held for monetary policy purposes are accounted for at amortised cost subject to impairment.

Securities other than those held for monetary policy purposes

Marketable securities and similar assets are valued either at the mid-market prices or on the basis of the relevant yield curve prevailing on the balance sheet date, on a security-by-security basis. For 2022, mid-market prices on 30 December 2022 were used.

Marketable investment funds are valued at market prices on a net – fund – basis and not on the basis of the underlying assets provided that they meet certain predetermined criteria, broadly speaking in relation to the level of influence of the Bank of Finland on the day-to-day operations of the fund, the legal status of the fund and the way the investment is evaluated. There is no netting between the revaluation results of different marketable investment funds.

Real estate funds are valued on the basis of the last available price. The prices are reviewed in January when the funds report the prices on the balance sheet date.

4. Accounting policies relating to intra-ESCB balances

Intra-Eurosystem balances result primarily from cross-border payments in the EU that are settled in central bank money in euro. These transactions are for the most part initiated by private entities. They are primarily settled in TARGET2 – the Trans-European Automated Real-time Gross settlement Express Transfer system – and give rise to bilateral balances in the TARGET2 accounts of EU central banks. These bilateral balances are netted and then assigned to the ECB on a daily basis, leaving each national central bank (NCB) with a single net bilateral position vis-à-vis the ECB only.

Intra-Eurosystem balances of the Bank of Finland vis-à-vis the ECB arising from TARGET2, as well as other intra-Eurosystem balances denominated in euro (e.g. interim ECB profit distributions to NCBs, monetary income results), are presented on the balance sheet of the Bank of Finland as a single net asset or liability position under ‘Other claims within the Eurosystem (net)’ or ‘Other liabilities within the Eurosystem (net)’. Intra-ESCB balances versus non-euro area NCBs not arising from TARGET2 are disclosed either under ‘Claims on non-euro area residents denominated in euro’ or ‘Liabilities to non-euro area residents denominated in euro’.

Intra-Eurosystem claims arising from the Bank of Finland’s participating interest in the ECB are reported under ‘Participating interest in ECB’. This balance sheet item includes (i) the NCBs’ paid-up share in the ECB’s subscribed capital, (ii) any net amount paid by the NCBs due to the increase in their shares in the ECB’s equity value¹⁾ resulting from all previous ECB capital key adjustments, and (iii) contributions in accordance with Article 48.2 of the Statute of the ESCB with respect to central banks of Member States whose derogations have been abrogated.

Intra-Eurosystem claims arising from the transfer of foreign reserve assets to the ECB by the Bank of Finland at the time of joining the Eurosystem are denominated in euro and reported under ‘Claims equivalent to the transfer of foreign reserves’.

Intra-Eurosystem balances arising from the allocation of euro banknotes within the Eurosystem are included as a single net asset under ‘Net claims related to the allocation of euro banknotes within the Eurosystem’ (see ‘Banknotes in circulation’ in ‘Accounting policies’).

5. Valuation of fixed assets

Fixed assets are valued at cost less depreciation. Depreciation is calculated on a straight-line basis over the expected economic lifetime of an asset, beginning primarily in the calendar month following acquisition.

The counteritem of buildings and land capitalised in the 1999 balance sheet at market prices is the revaluation account. Depreciation in respect of buildings has been entered by adjusting the revaluation account downwards so that depreciation has no impact on the Bank of Finland's profit and loss account.

The economic lifetimes of assets are calculated as follows:

- computers, related hardware and software, and motor vehicles: 4 years
- machinery and equipment: 10 years
- buildings: 25 years.

Fixed assets with a value of less than EUR 10,000 are written off in the year of acquisition.

6. Banknotes in circulation

The ECB and the euro area NCBs, which together comprise the Eurosystem, issue euro banknotes.²⁾ The total value of euro banknotes in circulation is allocated to the Eurosystem central banks on the last working day of each month in accordance with the banknote allocation key.³⁾ The ECB has been allocated an 8% share of the total value of euro banknotes in circulation, whereas the remaining 92% has been allocated to NCBs according to the banknote allocation key. The share of banknotes allocated to each NCB is disclosed in the balance sheet under liability item 'Banknotes in circulation'. The difference between the value of the euro banknotes allocated to each NCB in accordance with the banknote allocation key and the value of the euro banknotes that it actually puts into circulation also gives rise to remunerated⁴⁾ intra-Eurosystem balances. These claims or liabilities are disclosed under the sub-item 'Intra-Eurosystem claims/liabilities: Net claims/liabilities related to the allocation of euro banknotes within the Eurosystem'. In the Bank of Finland's balance sheet, the item is on the assets side. The interest income and expense on these balances is cleared through the accounts of the ECB and is disclosed under 'Net interest income'.

7. Interim profit distribution by the ECB

The Governing Council of the ECB has decided that the seigniorage income of the ECB, which arises from the 8% share of euro banknotes allocated to the ECB, as well as the income arising from the securities held under (a) the Securities Markets Programme (SMP), (b) the third covered bond purchase programme (CBPP3), (c) the asset-backed securities purchase programme (ABSPP), (d) the public sector purchase programme (PSPP), and (e) the pandemic emergency purchase programme (PEPP) is distributed in January of the following year by means of an interim profit distribution, unless otherwise decided by the Governing Council.⁵¹ Any such decision shall be taken where, on the basis of a reasoned estimate prepared by the Executive Board, the Governing Council expects that the ECB will have an overall annual loss or will make an annual net profit that is less than this income. The Governing Council may also decide to transfer all or part of this income to a provision for financial risks.

Furthermore, the Governing Council may also decide to reduce the amount of the income on euro banknotes in circulation to be distributed in January by the amount of the costs incurred by the ECB in connection with the issue and handling of euro banknotes. The amount distributed to NCBs is disclosed in the profit and loss account under 'Income from equity shares and participating interest'.

8. Pension fund

The assets of the Bank of Finland's pension fund are included in the Bank's balance sheet. A separate annual report is prepared on the pension fund.

The pension fund's real estate is recorded in the balance sheet at value prevailing on transfer date less annual depreciation. To the extent that the balance sheet value of buildings has been covered by revaluation, the corresponding depreciation is recorded by reversing the revaluation so that the depreciation has no impact on the Bank of Finland's profit and loss account.

9. Recording of provisions

Provisions can be made in the annual accounts, if they are necessary for safeguarding the real value of the Bank's funds or for smoothing out variations in profit and loss arising from changes in exchange rates or market value of securities. Provisions can also be made, as necessary, to cover the Bank's pension liability.

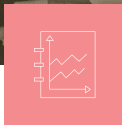
10. Off-balance-sheet commitments

Profits and losses arising from off-balance-sheet items are recognised and treated in a similar manner to on-balance-sheet instruments. Foreign exchange forward transactions are included in the net foreign currency position for calculating average costs.

11. Changes in accounting policies

There were no changes in accounting policies in 2022.

-
- 1) Equity value means the total of the ECB's reserves, revaluation accounts and provisions equivalent to reserves, minus any loss carried forward from previous periods. In the event of capital key adjustments taking place during the financial year, the equity value also includes the ECB's accumulated net profit or net loss until the date of the adjustment.
 - 2) Decision of the ECB of 13 December 2010 on the issue of euro banknotes (ECB/2010/29) (2011/67/EU) (OJ L 35, 9.2.2011, p. 26), as amended. The unofficial consolidated text with the list of amendments can be found [here](#).
 - 3) Banknote allocation key means the percentages that result from taking into account the ECB's share in the total euro banknote issue and applying the subscribed capital key to the NCBs' share in such total.
 - 4) Decision (EU) 2016/2248 of the ECB of 3 November 2016 on the allocation of monetary income of the national central banks of Member States whose currency is the euro (ECB/2016/36), (OJ L 347, 20.12.2016, p. 26), as amended. The unofficial consolidated text with the list of amendments can be found [here](#).
 - 5) Decision (EU) 2015/298 of the ECB of 15 December 2014 on the interim distribution of the income of the European Central Bank (ECB/2014/57), (OJ L 53, 25.2.2015, p. 24), as amended. The unofficial consolidated text with the list of amendments can be found [here](#).



Notes on the balance sheet

31.12.2022

Assets

1. Gold and gold receivables

The Bank's holdings of gold total 1,576,487 troy ounces (1 troy ounce = 31.103 g). In the annual accounts, gold has been valued at market price. At the beginning of 1999 the Bank of Finland – and the other national central banks (NCBs) participating in the Eurosystem – transferred about 20% of its gold holdings to the ECB.

Gold	31 Dec 2022	31 Dec 2021
Holdings (troy ounces, million)	1.6	1.6
Price: EUR per troy ounce	1,706.1	1,609.5
Market price (EUR m)	2,689.6	2,537.3
Change in market value (EUR m)	152.3	103.4

2. Claims on non-euro area residents denominated in foreign currency

The item consists of claims on non-euro area residents denominated in foreign currency and included in the Bank of Finland's foreign reserves, and receivables from the International Monetary Fund (IMF).

2.1 Receivables from the International Monetary Fund (IMF)

Breakdown of receivables from the IMF	31 Dec 2022		31 Dec 2021	
	EUR m	SDR m	EUR m	SDR m
Reserve tranche in the IMF	828.9	662.2	741.2	599.7
Special drawing rights	4,464.3	3,566.6	4,234.5	3,426.2
Other receivables from the IMF	20.9	16.7	40.3	32.6
Total	5,314.2	4,245.6	5,016.0	4,058.6

EUR/SDR exchange rate in financial years 2021 and 2022	2022	2021
End-March	0.8030	0.8277
End-June	0.7826	0.8333
End-September	0.7621	0.8216
End-December	0.7989	0.8091

Finland's quota in the IMF is SDR 2,410.6 million. The reserve tranche is the part of the Bank's quota that has been paid to the IMF in foreign currency. Another part of the quota was formerly paid to the IMF in Finnish markka. The IMF has lent this part back to the Bank of Finland. The net effect of the Finnish markka quota on the Bank's balance sheet is zero, since the above-mentioned receivables and the liability are included in the same balance sheet item.

The Bank of Finland's holdings of special drawing rights (SDRs) are equivalent to EUR 4,464.3 million. Special drawing rights are reserve assets created and allocated by the IMF to its member countries. They are used in currency transactions as normal currency units. The amount of the sub-item changes on the basis of foreign exchange transactions between the member countries. It is also affected by interests earned and paid as well as remuneration on the Bank's claims in the IMF.

In total, the Bank of Finland's receivables from the IMF amount to EUR 5,314.2 million.

2.2 Balances with banks and security investments, external loans and other external assets

This item consists of foreign currency-denominated deposits and security investments as well as external loans and other external assets.

Breakdown of claims on non-euro area residents denominated in foreign currency	31 Dec 2022 EUR m	31 Dec 2021 EUR m	Change EUR m
Deposits	–	44.7	-44.7
Coupon papers	4,070.5	3,963.5	107.0
Discount papers	220.4	485.55	-265.2
Fund investments	1,580.8	1,775.7	-194.9
Other	1,244.3	894.9	349.5
Total	7,116.0	7,164.3	-48.3

Currency breakdown of securities of non-euro area residents denominated in foreign currency

Currency	31 Dec 2022		31 Dec 2021	
	EUR m	%	EUR m	%
Pound sterling	587.8	13.7	410.8	9.2
US dollar	3,569.7	83.2	3,827.3	86.0
Japanese yen	133.4	3.1	211.0	4.7
Total	4,290.9	100.0	4,449.1	100.0

Remaining maturity of securities of non-euro area residents denominated in foreign currency

Maturity	31 Dec 2022		31 Dec 2021	
	EUR m	%	EUR m	%
Up to 1 year	1,169.9	27.3	1,638.0	36.8
Over 1 year	3,121.0	72.7	2,811.0	63.2
Total	4,290.9	100.0	4,449.1	100.0

3. Claims on euro area residents denominated in foreign currency

This item consists of foreign currency-denominated deposits and securities as well as other claims on euro area residents denominated in foreign currency.

Breakdown of claims on euro area residents denominated in foreign currency	31 Dec 2022 EUR m	31 Dec 2021 EUR m	Change EUR m
Deposits	33.7	87.2	-53.5
Coupon papers	109.1	269.3	-160.2
Other	29.7	3.4	26.2
Total	172.4	359.9	-187.5

Currency breakdown of securities of euro area residents denominated in foreign currency

Currency	31 Dec 2022		31 Dec 2021	
	EUR m	%	EUR m	%
Pound sterling	61.7	56.5	145.5	54.0
US dollar	47.4	43.5	123.8	46.0
Total	109.1	100.0	269.3	100.0

Remaining maturity of securities of euro area residents denominated in foreign currency

Maturity	31 Dec 2022		31 Dec 2021	
	EUR m	%	EUR m	%
Up to 1 year	59.4	54.4	148.0	55.0
Over 1 year	49.7	45.6	121.3	45.0
Total	109.1	100.0	269.3	100.0

4. Claims on non-euro area residents denominated in euro

As at 31 December 2022, the Bank of Finland had no claims on non-euro area residents denominated in euro.

5. Lending to euro area credit institutions related to monetary policy operations denominated in euro

This item consists of monetary policy instruments used by the Bank of Finland to implement monetary policy as part of the Eurosystem. The item consists of interest-bearing credit to Finnish credit institutions, and the amount recorded is determined by the credit institutions' liquidity needs.

The total Eurosystem holding of monetary policy assets amounts to EUR 1,324.3 billion, of which the Bank of Finland holds EUR 30,096.4 million. In accordance with Article 32.4 of the ESCB Statute, losses from monetary policy operations, if they were to materialise, are shared in full by the Eurosystem NCBs, in proportion to the prevailing ECB capital key shares. Losses can only materialise if both the counterparty fails and the recovery of funds received from the resolution of the collateral provided by the counterparty is not sufficient. For specific collateral which can be accepted by NCBs at their own discretion, risk sharing has been excluded by the Governing Council of the ECB.

Lending to euro area credit institutions related to monetary policy operations denominated in euro	31 Dec 2022 EUR m	31 Dec 2021 EUR m	Change EUR m
Main refinancing operations	–	–	–
Longer-term refinancing operations	30,096.4	36,113.4	-6,017.0
Fine-tuning reverse operations	–	–	–
Structural reverse operations	–	–	–
Marginal lending facility	–	–	–
Credits related to margin calls	–	–	–
Total	30,096.4	36,113.4	-6,017.0

5.1 Main refinancing operations

Main refinancing operations (MROs) are liquidity providing reverse transactions which are executed with a weekly frequency and a maturity of one week, on the basis of standard tenders. They are conducted as fixed rate tender procedures. These operations play a key role in achieving the aims of steering interest rates, managing market liquidity and signalling the monetary policy stance.

5.2 Longer-term refinancing operations

These operations (LTROs) aim to provide counterparties with additional longer-term refinancing. These operations were conducted at fixed rate with allotment of the total amount bid. In addition to the series of seven quarterly targeted longer-term refinancing operations (TLTRO III) introduced in 2019, the Governing Council added three further operations to this series in December 2020, which were conducted between June and December 2021. These operations have a three-year maturity. For the first seven TLTROs III, from September 2021, starting 12 months after the settlement of each TLTRO III, participants have had the option on a quarterly basis of terminating or reducing the amount of TLTRO III concerned before maturity. For the eighth or subsequent TLTROs III, participants have had that option on a quarterly basis starting in June 2022. According to the initial decisions taken by the Governing Council, the final interest rate applicable to each TLTRO III operation could be as low as the average interest rate on the deposit facility prevailing over the life of the operation.

Furthermore, in response to the COVID-19 shock, in 2020¹⁾ the Governing Council decided that for the period between 24 June 2020 and 23 June 2021 and the period between 24 June 2021 and 23 June 2022 – referred to as the *special interest rate period* and the *additional special interest rate period* respectively – the interest rate applicable can be as low as 50 basis points below the average interest rate on the deposit facility prevailing over the same period, but in any case may not become less negative than -1%.

Additionally, on 27 October 2022 the Governing Council decided that, from 23 November 2022 until the maturity date or early repayment date of each respective outstanding TLTRO III operation, the interest rate on TLTRO III operations will be indexed to the average applicable key ECB interest rates over this period. On the same date, the Governing Council decided that three additional voluntary early repayment dates are introduced to provide TLTRO III participants with additional opportunities to partly, or fully, repay their respective TLTRO III borrowings before their maturity.

The actual interest rates can only be known at the maturity or early repayment of each operation and before that a reliable estimate is only possible as far as the interest rate related data regarding the special interest rate period and the additional special interest rate period have already been communicated to the counterparties. This means that for the annual accounts 2022, the following approach was applied for calculating the TLTRO III interest accruals: (i) until 23 June 2022, the interest rates over the additional special interest rate period, for which the interest rate related data was communicated to the counterparties on 10 June 2022, (ii) for the period from 24 June 2022 until 22 November 2022, the interest rate was linked to the average applicable key ECB interest rate from the settlement date till 22 November 2022, and (iii) for the period 23 November 2022 until 31 December 2022, the interest rate was indexed to the average applicable key ECB interest rate over this period. Furthermore, the impact of policy rate changes in 2022 on interest of the pre-special interest rate period is also considered in 2022.

Furthermore, of the four additional pandemic emergency longer-term refinancing operations (PELTROs) allotted in 2021 on a quarterly basis, each with a tenor of approximately one year, three matured in the course of 2022. These operations provided a liquidity backstop to the euro area banking system and contribute to preserving the smooth functioning of the money market during the extended pandemic period. The PELTROs were conducted as fixed rate tender procedures with full allotment. The interest rate is 25 basis points below the average rate applied in the Eurosystem's main refinancing operations over the life of the respective PELTRO.

5.3 Fine-tuning reverse operations

Fine-tuning reverse operations aim to regulate the market liquidity situation and steer interest rates, particularly to smooth the effects on interest rates caused by unexpected market fluctuations. Owing to their nature, they are executed on an ad-hoc basis.

5.4 Structural reverse operations

These are reverse open-market transactions through standard tenders to enable the Eurosystem to adjust its structural liquidity position vis-à-vis the financial sector.

5.5 Marginal lending facility

Marginal lending facilities may be used by counterparties to obtain overnight liquidity from NCBs at a pre-specified interest rate against eligible assets.

5.6 Credits related to margin calls

This item refers to cash paid to counterparties in those instances where the market value of the collateral exceeds an established trigger point implying an excess of collateral with respect to outstanding monetary policy operations.

6. Other claims on euro area credit institutions denominated in euro

This item consists of euro-denominated deposits and accounts with euro area credit institutions.

Other claims on euro area credit institutions denominated in euro	31 Dec 2022 EUR m	31 Dec 2021 EUR m	Change EUR m
Current accounts	0.0	0.0	0.0
Reverse repurchase agreements	–	–	–
Emergency Liquidity Assistance (ELA)	–	–	–
Other	16.4	–	16.4
Total	16.4	0.0	16.4

On 17 May 2017, the Governing Council decided to publish the text of the Emergency Liquidity Assistance (ELA) agreement with the aim of further increasing transparency regarding ELA. This publication replaces the ELA procedures document that has been available on the ECB website since October 2013. For the text of the press release, click on: For the text of the press release, click on: <http://www.ecb.europa.eu/press/pr/date/2017/html/ecb.pr170619.en.html>.

7. Securities of euro area residents denominated in euro

7.1 Securities held for monetary policy purposes

As at 31 December 2022 this item consisted of securities acquired by the Bank of Finland within the scope of the Securities Markets Programme (SMP), the third covered bond purchase programme (CBPP3), the public sector purchase programme (PSPP), the corporate sector purchase programme (CSPP) and the pandemic emergency purchase programme (PEPP). All securities held under the first and the second covered bond purchase programmes (CBPP1 and CBPP2) matured in the course of 2022, and therefore the ECB and the euro area NCBs do not have holdings of these securities as at 31 December 2022.

	Start date	End date	Decision	Universe of eligible securities ¹
Completed / Terminated programmes				
CBPP1	July 2009	June 2010	ECB/2009/16	Covered bonds of euro area residents
CBPP2	November 2011	October 2012	ECB/2011/17	Covered bonds of euro area residents
SMP	May 2010	September 2012	ECB/2010/5	Public and private debt securities issued in the euro area ²
Asset purchase programme (APP)				
CBPP3	October 2014	active	ECB/2020/8, as amended	Covered bonds of euro area residents
ABSPP	November 2014	active	ECB/2014/45, as amended	Senior and guaranteed mezzanine tranches of asset-backed securities of euro area residents
PSPP	March 2015	active	ECB/2020/9	Bonds issued by euro-area central, regional or local governments or recognised agencies as well as by international organisations and multilateral development banks located in the euro area
CSPP	June 2016	active	ECB/2016/16, as amended	Bonds and commercial papers issued by non-bank corporations established in the euro area
Pandemic emergency purchase programme (PEPP)				
PEPP	March 2020	active	ECB/2020/17, as amended	All asset categories eligible under the APP ³

1) Further eligibility criteria for the specific programmes can be found in the Governing Council's decisions.

2) Only public debt securities issued by five euro area treasuries were purchased under the SMP.

Start date	End date	Decision	Universe of eligible securities ¹
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3) A waiver of the eligibility requirements was granted for securities issued by the Greek Government.

During the first quarter of 2022 the Eurosystem continued its net purchases under the asset purchase programme (APP)²⁾ at a monthly pace of EUR 20 billion on average. In March 2022 the Governing Council decided³⁾ to revise the net purchase amounts to EUR 40 billion in April, EUR 30 billion in May and EUR 20 billion in June, while in June 2022 the Governing Council decided⁴⁾ to end net asset purchases under the APP as of 1 July 2022. The Governing Council intends to continue reinvesting, in full, the principal payments from maturing securities until the end of February 2023. Subsequently, the APP portfolio will decline at a measured and predictable pace, as the Eurosystem will not reinvest all of the principal payments from maturing securities. The decline will amount to EUR 15 billion per month on average until the end of the second quarter of 2023 and its subsequent pace will be determined over time. The Governing Council will regularly reassess the pace of the APP portfolio reduction to ensure it remains consistent with the overall monetary policy strategy and stance, to preserve market functioning, and to maintain firm control over short-term money market conditions.

In addition, during the first quarter of 2022 the Eurosystem continued its net asset purchases under the PEPP⁵⁾, though at a lower pace than in the previous quarter, following the decision of the Governing Council in December 2021⁶⁾. Based on the same decision, the net PEPP purchases were discontinued at the end of March 2022. The Governing Council intends to reinvest the principal payments from maturing securities purchased under the PEPP until at least the end of 2024. The Governing Council will continue applying flexibility in the reinvestments, with a view to countering risks to the monetary policy transmission mechanism related to the pandemic.

The securities purchased under all of these programmes are valued on an amortised cost basis subject to impairment (see 'Valuation and amortisation of securities' under 'Accounting policies'). The amortised cost of the securities held by the Bank of Finland, and their market value⁷⁾ (which is not recorded on the balance sheet or in the profit and loss account and is provided for comparison purposes only), are as follows:

Securities held for monetary policy purposes (EUR m)						
	31 Dec 2022		31 Dec 2021		Change	
	Balance sheet value	Market value	Balance sheet value	Market value	Balance sheet value	Market value
CBPP2	–	–	10.0	10.0	-10.0	-10.0
SMP	50.6	53.6	64.5	74.8	-13.9	-21.3
CBPP3	11,730.2	10,650.6	11,004.1	11,045.9	726.0	-395.3
PSPP - government/agency securities	37,294.6	31,605.3	34,554.3	35,451.4	2,740.4	-3,846.1
PSPP - supranational securities	2,140.5	1,913.1	2,426.5	2,574.0	-286.0	-660.9

Securities held for monetary policy purposes (EUR m)						
	31 Dec 2022		31 Dec 2021		Change	
	Balance sheet value	Market value	Balance sheet value	Market value	Balance sheet value	Market value
CSPP	16,482.8	14,442.2	13,695.0	13,905.6	2,787.8	536.6
PEPP - covered bonds	218.1	187.0	233.3	231.5	-15.3	-44.5
PEPP - government/agency securities	22,933.0	19,219.8	23,200.9	22,974.3	-267.9	-3,754.4
PEPP - corporate sector securities	4,894.9	4,017.2	4,636.3	4,676.1	258.6	-658.8
Total	95,744.6	82,088.9	89,824.9	90,943.6	5,919.7	-8,854.7

The Governing Council assesses on a regular basis the financial risks associated with the securities held under these programmes. In this context, impairment tests are conducted on an annual basis, using data as at the year-end and are approved by the Governing Council. In these tests, impairment indicators are assessed separately for each programme. In cases where impairment indicators are observed, further analysis is performed to confirm that the cash flows of the underlying securities have not been affected by an impairment event.

In accordance with Article 32.4 of the ESCB Statute, losses from holdings of securities purchased under the SMP, CBPP3 and CSPP programmes, from holdings of securities of supranational organisations purchased under the PSPP and from holdings of covered bonds and corporate sector securities purchased under the PEPP, if they were to materialise, are shared in full by the Eurosystem NCBs, in proportion to their prevailing ECB capital key shares.

As a result of impairment tests conducted as at 31 December 2022 on securities purchased under the aforementioned programmes, the Governing Council decided that all future cash flows on these securities are expected to be received. The following table shows, for each programme, total holdings of Eurosystem NCBs and the Bank of Finland's share held on the balance sheet.

Securities held for monetary policy purposes (EUR m)	Held by Eurosystem NCBs		On the Bank of Finland's balance sheet	
	31 Dec 2022	31 Dec 2021	31 Dec 2022	31 Dec 2021
SMP	2,142.5	5,486.3	50.6	64.5
CBPP3	276,856.7	273,233.2	11,730.2	11,004.1
PSPP - supranational securities	275,228.1	264,537.0	2,140.5	2,426.5
CSPP	344,119.2	309,675.5	16,482.8	13,695.0
PEPP - covered bonds	5,282.8	5,377.1	218.1	233.3
PEPP - supranational securities	145,687.1	130,590.5	–	–
PEPP - corporate sector securities	46,073.9	43,781.6	4,894.9	4,636.3
Total	1,095,390.3	1,032,681.2	35,517.0	32,059.7

7.2 Other securities

This item consists of holdings of fund shares issued by euro area residents.

Breakdown of other securities of euro area residents denominated in euro (EUR m)	31 Dec 2022	31 Dec 2021	Change
Fund investments	155.5	175.8	-20.2
Total	155.5	175.8	-20.2

8. Intra-Eurosystem claims

8.1 Participating interest in ECB

Pursuant to Article 28 of the ESCB Statute, the ESCB national central banks are the sole subscribers to the capital of the ECB. Subscriptions depend on shares which are fixed in accordance with Article 29 of the ESCB Statute and are subject to adjustment every five years or whenever there is a change in composition of the ESCB national central banks.

For the Bank of Finland this balance sheet item includes (i) the paid-up share in the ECB's subscribed capital, (ii) the net amount paid by the Bank of Finland due to the increase in its share in the ECB's equity value resulting from all previous ECB capital key adjustments, and (iii) contributions in accordance with Article 48.2 of the Statute of the ESCB.

NCBs' paid-up share in the ECB's capital

	Capital key since 1 Feb 2020, %	Subscribed capital EUR millions	Paid-up capital as at 31 Dec 2020 EUR millions	Paid-up capital as at 31 Dec 2021 EUR millions	Paid-up capital as at 31 Dec 2022 EUR millions
Nationale Bank van België/Banque Nationale de Belgique (Belgium)	2.9630	320.7	276.3	298.5	320.7
Deutsche Bundesbank (Germany)	21.4394	2,320.8	1,999.2	2,160.0	2,320.8
Eesti Pank (Estonia)	0.2291	24.8	21.4	23.1	24.8
Central Bank of Ireland (Ireland)	1.3772	149.1	128.4	138.8	149.1
Bank of Greece (Greece)	2.0117	217.8	187.6	202.7	217.8
Banco de España (Spain)	9.6981	1,049.8	904.3	977.1	1,049.8
Banque de France (France)	16.6108	1,798.1	1,548.9	1,673.5	1,798.1
Banca d'Italia (Italy)	13.8165	1,495.6	1,288.3	1,392.0	1,495.6
Central Bank of Cyprus (Cyprus)	0.1750	18.9	16.3	17.6	18.9
Latvijas Banka (Latvia)	0.3169	34.3	29.5	31.9	34.3
Lietuvos bankas (Lithuania)	0.4707	51.0	43.9	47.4	51.0
Banque centrale du Luxembourg (Luxembourg)	0.2679	29.0	25.0	27.0	29.0
Central Bank of Malta (Malta)	0.0853	9.2	8.0	8.6	9.2
De Nederlandsche Bank (The Netherlands)	4.7662	515.9	444.4	480.2	515.9
Oesterreichische Nationalbank (Austria)	2.3804	257.7	222.0	239.8	257.7
Banco de Portugal (Portugal)	1.9035	206.1	177.5	191.8	206.1
Banka Slovenije (Slovenia)	0.3916	42.4	36.5	39.5	42.4
Národná banka Slovenska (Slovakia)	0.9314	100.8	86.9	93.8	100.8
Suomen Pankki – Finlands Bank (Finland)	1.4939	161.7	139.3	150.5	161.7
Subtotal for euro area NCBs	81.3286	8,803.8	7,583.6	8,193.7	8,803.8

NCBs' paid-up share in the ECB's capital

	Capital key since 1 Feb 2020, %	Subscribed capital EUR millions	Paid-up capital as at 31 Dec 2020 EUR millions	Paid-up capital as at 31 Dec 2021 EUR millions	Paid-up capital as at 31 Dec 2022 EUR millions
Bulgarian National Bank (Bulgaria)	0.9832	106.4	4.0	4.0	4.0
Česká národní banka (Czech Republic)	1.8794	203.4	7.6	7.6	7.6
Danmarks Nationalbank (Denmark)	1.7591	190.4	7.1	7.1	7.1
Hrvatska narodna banka (Croatia)	0.6595	71.4	2.7	2.7	2.7
Magyar Nemzeti Bank (Hungary)	1.5488	167.7	6.3	6.3	6.3
Narodowy Bank Polski (Poland)	6.0335	653.1	24.5	24.5	24.5
Banca Națională a României (Romania)	2.8289	306.2	11.5	11.5	11.5
Sveriges Riksbank (Sweden)	2.9790	322.5	12.1	12.1	12.1
Subtotal for non-euro area NCBs	18.6714	2,021.2	75.8	75.8	75.8
Total	100.0000	10,825.0	7,659.4	8,269.5	8,879.6

Capital of the ECB

The subscribed capital of the ECB is EUR 10,825 million. After the Bank of England's withdrawal from the ESCB on 31 January 2020, the ECB kept its subscribed capital unchanged and the share of the Bank of England in the ECB's subscribed capital was reallocated among both the euro area NCBs and the remaining non-euro area NCBs.

The ECB's paid-up capital also remained unchanged at EUR 7,659 million in 2020, as the remaining NCBs covered the withdrawn Bank of England's paid-up capital of EUR 58 million. In addition, the Governing Council decided that the euro area NCBs would pay up in full their increased subscriptions in two annual instalments in 2021 and 2022.⁸⁾ The Bank of Finland paid up the first instalment of EUR 11.2 million on 29 December 2021, increasing its share in the paid-up capital of the ECB from EUR 139.3 million in 2020 to EUR 150.5 million in 2021. The second instalment of EUR 11.2 million was paid up on 28 December 2022, increasing the Bank of Finland's share in the paid-up capital of the ECB to EUR 161.7 million in 2022.

The balance sheet item also includes net adjustments totalling EUR 26.0 million recorded in different years on account of changes to the ECB capital key.

8.2 Claims equivalent to the transfer of foreign reserves

These represent the Bank of Finland's claims arising from the transfer of foreign reserve assets to the ECB when the Bank joined the Eurosystem. Pursuant to Article 30.2 of the Statute of the ESCB, the contribution of each NCB is fixed in proportion to its share in the subscribed capital of the ECB, meaning the size of the item changes whenever the ECB capital key is adjusted. The remuneration of these claims is calculated daily at the latest available marginal interest rate used by the Eurosystem in its tenders for main refinancing operations, adjusted to reflect a zero return on the gold component.

As at 31 December 2022, the Bank of Finland's claims equivalent to the transfer of foreign reserves totalled EUR 741.1 million.

8.3 Net claims related to the allocation of euro banknotes within the Eurosystem

This item consists of the claim arising from the adjustment of the banknotes of the Bank of Finland to correspond to the ECB capital key as well as the liability related to the share of 8% of the banknotes in circulation allocated to the ECB. For both the claim and the liability, the counter entry is recorded under the balance sheet liability item 'Banknotes in circulation'.²⁾

At the end of 2022 the balance sheet item totalled EUR 8,009.9 million (EUR 8,263.0 million in 2021). The change in comparison to 2021 was due to the increase of 4.0% in banknotes put into circulation by the Bank of Finland in 2022 as well as the rise of 1.8% in banknotes in circulation in the Eurosystem as a whole. The remuneration of these claims is calculated daily at the latest available marginal interest rate used by the Eurosystem in its tenders for main refinancing operations.

8.4 Other claims within the Eurosystem (net) or liability item Other liabilities within the Eurosystem (net)

	31 Dec 2022 EUR m	31 Dec 2021 EUR m	Change EUR m
Other claims/liabilities within the Eurosystem (net)			
Due to/from ECB in respect of TARGET2 (including balances held with Eurosystem banks through correspondent accounts)	39,252.0	25,282.4	13,969.6
Due to/from ECB in respect of monetary income	-422.1	-483.1	61.1
Due from ECB in respect of the ECB's interim profit distribution	–	2.8	-2.8
Other claims/liabilities within the Eurosystem (net)	38,829.9	24,802.0	14,027.9

The balance of EUR 38,829.9 million as at 31 December 2022 represents the sum of three components: (1) the position of the Bank of Finland vis-à-vis the ECB in respect of the transfers issued and received through TARGET2 by the ESCB national central banks, including the ECB, plus the balances held with Eurosystem central banks through correspondent accounts; (2) the position vis-à-vis the ECB in respect of the pooling and allocation of monetary income within the Eurosystem pending settlement; and (3) the Bank of Finland's position vis-à-vis the ECB in respect of any amounts receivable or refundable, including the amount due to the Bank of Finland from the ECB in respect of the ECB's interim profit distribution.

The year-end net transfers via TARGET2 had a credit balance of EUR 39,252.0 million. The remuneration of this position is calculated daily at the latest available marginal interest rate used by the Eurosystem in its tenders for main refinancing operations.

The position vis-à-vis the ECB in respect of the annual pooling and allocation of monetary income within the Eurosystem national central banks had a debit balance of EUR -422.1 million at year-end (see 'Net result of pooling of monetary income' in the notes on the profit and loss account).

In 2021 this item also included the amount due to the Bank of Finland in respect of the ECB's interim profit distribution. With respect to 2022, the Governing Council, in view of the ECB's overall financial result for the year, decided to retain the full amount of income derived from banknotes in circulation, as well as income earned on securities purchased under the SMP, APP and PEPP (see 'Interim profit distribution by the ECB' under 'Accounting policies'). Therefore no related amounts were due at the end of 2022.

9. Other assets

This item consists of the Bank of Finland's holdings of euro coins, fixed assets and investment assets (shares and other equity). The item also includes valuation results of off-balance sheet items, accruals and other receivables as well as the pension fund's assets.

Tangible fixed assets			
Book value	31 Dec 2022 EUR m	31 Dec 2021 EUR m	Change EUR m
Land	6.8	6.8	–
Buildings	60.0	66.0	-6.1
Machinery and equipment	10.4	10.8	-0.4
Art and numismatic collection	0.6	0.6	0.0
Total	77.8	84.3	-6.5

Intangible fixed assets			
Book value	31 Dec 2022 EUR m	31 Dec 2021 EUR m	Change EUR m
IT systems	8.8	8.0	0.8
Total	8.8	8.0	0.8

Other holdings and sundry assets (EUR m)	31 Dec 2022	31 Dec 2021	Change
Coins of euro area	40.6	37.6	3.0
Shares and other equity	22.6	22.6	–
Pension fund's real estate and accruals	10.2	11.3	-1.1
Accruals	626.0	440.2	185.8
Items relating to valuation of off-balance sheet items	-50.1	2.6	-52.7
Sundry assets	0.8	1.0	-0.2
Total	650.2	515.4	134.8

Liabilities

1. Banknotes in circulation

This item consists of the Bank of Finland's share, in accordance with the ECB capital key and adjusted for the share allocated to the ECB, of the total amount of euro banknotes in circulation.

During 2022, the total value of euro banknotes in circulation increased by 1.8%. According to the allocation key, the Bank of Finland had euro banknotes in circulation worth EUR 26,567.4 million at the end of the year, compared with EUR 26,100.1 million at the end of 2021. The value of the euro banknotes actually issued by the Bank of Finland in 2022 increased by 4.0% from EUR 17,837.1 million to EUR 18,557.4 million. As this was less than the allocated amount, the difference of EUR 8,009.9 million (compared to EUR 8,263.0 million in 2021) is shown under asset sub-item 'Net claims related to the allocation of euro banknotes within the Eurosystem'.

Banknotes in circulation (EUR m)	31 Dec 2022	31 Dec 2021
EUR 5	75.2	74.8
EUR 10	-83.6	-90.6
EUR 20	3,315.3	3,250.2
EUR 50	13,751.8	12,784.6
EUR 100	-1,241.1	-1,179.9
EUR 200	877.5	810.8
EUR 500	1,862.4	2,187.2
Total	18,557.4	17,837.1
ECB issue figure	-2,310.1	-2,269.5
CSM figure	10,320.0	10,532.4
Banknotes in circulation in accordance with the ECB capital key	26,567.4	26,100.1

2. Liabilities to euro area credit institutions related to monetary policy operations denominated in euro

Liabilities to euro area credit institutions related to monetary policy operations denominated in euro	31 Dec 2022 EUR m	31 Dec 2021 EUR m	Change EUR m
Current accounts (covering the minimum reserve system)	4,684.5	101,053.9	-96,369.4
Deposit facility	134,012.7	23,552.7	110,460.0
Fixed-term deposits	–	–	–
Fine-tuning reverse operations	–	–	–
Deposits related to margin calls	–	–	–
Total	138,697.2	124,606.6	14,090.6

2.1 Current accounts (covering the minimum reserve system)

Current accounts contain the credit balances of the transaction accounts of credit institutions that are required to hold minimum reserves, excluding funds of credit institutions that are not freely disposable and accounts of credit institutions exempt from minimum reserve requirements, which are disclosed separately under liability item 3 ‘Other liabilities to euro area credit institutions denominated in euro’. Banks’ minimum reserve balances until 20 December 2022 were remunerated at the latest available marginal interest rate used by the Eurosystem in its tenders for main refinancing operations. On 27 October 2022 the Governing Council decided that, starting from 21 December 2022, these balances will be remunerated at the Eurosystem’s deposit facility rate. Since June 2014, the reserve holdings exceeding the required minimum reserves are remunerated at zero per cent or the deposit facility rate, whichever is lower.

Starting on 30 October 2019, the Governing Council introduced a two-tier system for reserve remuneration, which exempted part of credit institutions’ excess liquidity holdings (i.e. reserve holdings in excess of minimum reserve requirements) from negative remuneration at the rate applicable on the deposit facility. This part was remunerated at the annual rate of 0%. The volume of reserve holdings in excess of minimum reserve requirements that was exempt at year-end from the deposit facility rate – the exempt tier – was determined as a multiple of 6 on an institution’s minimum reserve requirements ¹⁰⁾. The non-exempt tier of excess liquidity holdings continued to be remunerated at the lower of either zero percent or the deposit facility rate. Following the raising of the deposit facility rate to above zero as of 14 September 2022, the Governing Council decided to suspend the two-tier system by setting the multiplier to zero as the two-tier system for the remuneration of excess reserves was no longer necessary.

2.2 Deposit facility

The deposit facility refers to overnight deposits placed by banks that access the Eurosystem's liquidity absorbing standing facility at the pre-specified rate.

2.3 Fixed-term deposits

Fixed-term deposits are fine-tuning liquidity absorbing operations that take the form of deposits.

2.4 Fine-tuning reverse operations

Fine-tuning reverse operations are used to offset high liquidity imbalances.

2.5 Deposits related to margin calls

This item refers to deposits made by counterparties in those instances where the market value of the collateral pledged falls short of an established trigger point.

3. Other liabilities to euro area credit institutions denominated in euro

As at 31 December 2022, this item amounted to EUR 354.2 million (2021: EUR 305.7 million) and included repurchase agreements. In 2021, the item included repurchase agreements, EUR 300.9 million, and collateral related to currency swap agreements, EUR 4.8 million.

4. Liabilities to other euro area residents denominated in euro

This item consists of euro-denominated liabilities to the public sector (EUR 1,725 million) and to financial institutions not subject to minimum reserve requirements (EUR 8.0 million).

5. Liabilities to non-euro area residents denominated in euro

This item consists of balances of international organisations and non-euro area banks with the Bank of Finland (EUR 5,891.3 million).

6. Liabilities to euro area residents denominated in foreign currency

As at 31 December 2022, the Bank of Finland had no liabilities to euro area residents denominated in foreign currency.

7. Liabilities to non-euro area residents denominated in foreign currency

As at 31 December 2022, the Bank of Finland had no liabilities to non-euro area residents denominated in foreign currency.

8. Counterpart of special drawing rights allocated by the IMF

This item is the counter-item of special drawing rights (SDRs, cf. item on the assets side). Originally, holdings of special drawing rights on the assets side of the balance sheet and their counter-item on the liabilities side matched up. As a result of SDR transactions, the Bank of Finland's claims related to special drawing rights at the year-end were greater than the counter-item on the liabilities side. On the liabilities side, the counter-item amounts to SDR 3,500.0 million. The item is presented in the balance sheet in euro, valued at the rate prevailing on 31 December 2022 (EUR 4,380.9 million).

9. Intra-Eurosystem liabilities (net)

Intra-Eurosystem liabilities and claims are elaborated on in more detail in the notes on the balance sheet under asset item 'Intra-Eurosystem claims'.

10. Other liabilities

This item consists of accruals, accounts payable and sundry liabilities. Accruals include e.g. transferable items recorded in connection with the financial accounts and accrued interest payable on long-term refinancing operations. Sub-item 'Sundry' includes e.g. liabilities related to value added and withholding tax payments.

Other liabilities (EUR m)	31 Dec 2022	31 Dec 2021	Change
Accruals	520.1	446.7	73.4
Accounts payable	0.7	1.6	-0.9
Sundry	1.6	-0.3	1.9
Total	522.4	448.0	74.4

11. Revaluation accounts

The item consists of unrealised valuation gains arising from the market valuation of foreign currency-denominated items and securities. The item also includes revaluations of land and buildings and other valuation differences arising from changes in accounting practice in 1999.

Revaluation accounts (EUR m)	31 Dec 2022	31 Dec 2021	Change
Gold	2,300.6	2,148.3	152.3
Foreign currencies:			
USD	1,049.2	764.6	284.6
GBP	26.3	68.3	-42.0
JPY	19.4	72.9	-53.5
SDR	34.4	30.3	4.0
Other currencies	0.2	0.2	0.0
Securities	1.6	24.3	-22.7
Fund investments	71.3	380.9	-309.6
Other revaluations	125.4	132.8	-7.3
Total	3,628.5	3,622.6	5.8

12. Provisions

Under section 20 of the Act on the Bank of Finland, provisions can be made in the annual accounts, if they are necessary for safeguarding the real value of the Bank's funds or for smoothing out variations in profit and loss arising from changes in exchange rates or market values of securities. At the end of 2022, these provisions totalled EUR 5,094.7 million. Provisions consist of a general provision, provision against real value loss, pension provision, and foreign exchange rate and price difference provision.

The provision for pensions has been established to cover the Bank of Finland's pension liabilities. These liabilities total EUR 569.5 million, and 100.6% of this amount, i.e. EUR 573.2 million, is covered by the pension provision. The change in the size of the pension provision during the year consists of a reduction of EUR -0.4 million in the revaluation account and a loss of EUR -2.6 million for the pension fund which was covered by reducing the pension provision. At the end of 2022, real estate in the value of EUR 9.9 million was earmarked for covering the pension provision (see note on asset item 'Other assets'). No specific assets have been earmarked for covering the remaining portion (EUR 562.9 million) of the pension provision. Instead, these assets are managed as part of the Bank's financial assets.

Provisions (EUR m)	Total provisions 31 Dec 2020	Change in provisions 2021	Total provisions 31 Dec 2021	Change in provisions 2022	Total provisions 31 Dec 2022
Foreign exchange rate and price difference provision	1,164	21	1,185	-165	1,021
General provision	1,945	–	1,945	-47	1,898
Provision against real value loss	1,545	58	1,603	–	1,603
Pension provision	582	-6	576	-3	573
Provision against losses in monetary policy operations	–	–	–	–	–
Total	5,237	73	5,309	-214	5,095

13. Capital and reserves

This item consists of the Bank of Finland's primary capital and reserve fund. Under section 21 of the Act on the Bank of Finland, the loss shall be covered from the reserve fund, if the annual accounts of the Bank show a financial loss. If the reserve fund is insufficient to cover part of the loss, the uncovered part may be left temporarily uncovered. Any profits in subsequent years shall be used first to cover such uncovered losses.

Capital and reserves (EUR m)	31 Dec 2022	31 Dec 2021	Change
Primary capital	840.9	840.9	-
Reserve fund	2,100.0	2,073.8	26.2
Total	2,940.9	2,914.8	26.2

14. Profit for the year

Profit for the financial year 2022 was EUR 0.00.

Profit for the year (EUR m)	31 Dec 2022	31 Dec 2021	Change
To be transferred for the needs of the State	-	26.3	-26.3
Bank of Finland's share of profit (to be transferred to the reserve fund)	-	26.2	-26.2
Total	-	52.5	-52.5

Post-balance-sheet events

Pursuant to Council Decision 2022/1211/EU of 12 July 2022, taken in accordance with Article 140(2) of the Treaty on the Functioning of the European Union, Croatia adopted the single currency on 1 January 2023. In accordance with Article 48.1 of the Statute of the ESCB and the legal acts adopted by the Governing Council on 30 December 2022, ⁽¹¹⁾ Hrvatska Narodna Banka paid up the remainder of its capital subscription to the ECB. In accordance with Article 48.1, in conjunction with Article 30.1, of the Statute of the ESCB, Hrvatska Narodna Banka transferred foreign reserve assets to the ECB in an amount corresponding to its subscribed capital share. As a result of the change in the capital key following Hrvatska Narodna Banka's entry in to the Eurosystem, the Bank of Finland's share in the ECB's paid up capital (capital key) declined from 1.8369% to 1.8221%. The Bank of Finland's share in the ECB's subscribed capital is 1.4939%.

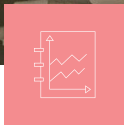
Until 28 February 2023, the date on which the annual accounts were approved by the Board of the Bank of Finland, an amount of EUR 250 million of the Bank of Finland's TLTRO III operations that were outstanding as at 31 December 2022, had been repaid early to the Bank of Finland. In the same period a total amount of EUR 99.3 billion was repaid early to the Eurosystem on the outstanding TLTRO III operations. (See also note on asset item 5.2 'Longer term refinancing operations').

Off-balance-sheet commitments

Off-balance sheet commitments (EUR m)	31 Dec 2022	31 Dec 2021
Futures contracts		
Nominal value of purchase agreements	46.4	–
Nominal value of sales agreements	-30.0	-17.7
Market value of FX swap agreements	-19.4	8.1
Investment commitments related to real estate funds	69.8	35.0
Securities lending	112.2	109.5

In accordance with the Governing Council's decisions, the Bank of Finland has made available for lending its holdings of securities purchased under the third covered bond purchase programmes, as well as its holdings of securities purchased under the CSPP, the PSPP and the PEPP. The Bank of Finland has also made available for lending securities in its own investment portfolio. Securities lending operations conducted against collateral other than cash are recorded in off-balance-sheet accounts at year-end. ¹²⁾ Such lending operations with a value of EUR 112.2 million (2021: EUR 109.5 million) were outstanding as at 31 December 2022.

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- 1) Decisions of the Governing Council of 30 April 2020 and 10 December 2020.
 - 2) Further details on the APP can be found on the [ECB's website](#).
 - 3) See the press release of 10 March 2022 of the Governing Council's decision.
 - 4) See the press release of 9 June 2022 of the Governing Council's decisions.
 - 5) Further details on the PEPP can be found on the ECB's website.
 - 6) See the press release of 16 December 2021 of the Governing Council's decisions.
 - 7) Market values are indicative and are derived on the basis of market quotes. When market quotes are not available, market prices are estimated using internal Eurosystem models.
 - 8) In particular, Decision (EU) 2020/138 of the ECB of 22 January 2020 on the paying-up of the European Central Bank's capital by the national central banks of Member States whose currency is the euro and repealing Decision (EU) 2019/44 (ECB/2020/4), Decision (EU) 2020/136 of the ECB of 22 January 2020 on the paying-up of the European Central Bank's capital by the non-euro area national central banks and repealing Decision (EU) 2019/48 (ECB/2020/2) and Decision (EU) 2020/139 of the ECB of 22 January 2020 laying down the terms and conditions for transfers of the European Central Bank's capital shares between the national central banks and for the adjustment of the paid-up capital and repealing Decision (EU) 2019/45 (ECB/2020/5).
 - 9) According to the accounting regime chosen by the Eurosystem on the issue of euro banknotes, a share of 8% of the total value of the euro banknotes in circulation is allocated to the ECB on a monthly basis. The remaining 92% of the value of the euro banknotes in circulation are allocated to the NCBs also on a monthly basis, whereby each NCB shows in its balance sheet a share of the euro banknotes issued corresponding to its paid-up share in the ECB's capital. The difference between the value of the euro banknotes allocated to the NCB according to the aforementioned accounting regime, and the value of euro banknotes put into circulation, is recorded as a 'Net Intra-Eurosystem claim/liability related to the allocation of euro banknotes within the Eurosystem'.
 - 10) The multiplier may be adjusted by the Governing Council over time in line with changing levels of excess liquidity holdings.
 - 11) Decision ECB/2022/51 of 30 December 2022 on the paying-up of capital, transfer of foreign reserve assets and contributions by Hrvatska narodna banka to the European Central Bank's reserves and provisions, OJ L 17, 19 January 2023 p. 94; Agreement of 30 December 2022 between Hrvatska narodna banka and the European Central Bank regarding the claim credited to Hrvatska narodna banka by the European Central Bank under 30.3 of the Statute of the European System of Central Banks and of the European Central Bank, OJ C 18, 19 January 2023 p. 1.
 - 12) Cash collateral received in securities lending operations is recorded in on-balance-sheet accounts (see note on liability item 3. 'Other liabilities to euro area credit institutions denominated in euro' and on liability item 5. 'Liabilities to non-euro area residents denominated in euro').



Notes on the profit and loss account

31.12.2022

1. Interest income

Interest income generated in and outside the euro area totalled EUR 1,124.7 million. Of this, EUR 182.8 million consisted of foreign currency-denominated interest income and EUR 941.9 million of interest income denominated in euro.

The Governing Council started to raise the key ECB interest rates on 27 July 2022. At that time, the deposit facility rate was raised to 0%, and the period of many years when interest was charged on central bank deposits came to an end. Until then, national central banks (NCBs) had earned negative interest on minimum reserve deposits in excess of the minimum reserve requirements. Since 14 September 2022, NCBs have incurred interest expense on overnight deposits and minimum reserve deposits. Until 20 December 2022, minimum reserve deposits were remunerated at the interest rate on the main refinancing operations, but on 21 December 2022 the remuneration was changed and set at the deposit facility rate.¹⁾

ESCB items – claims equivalent to the transfer of foreign reserves to the ECB, claims and liabilities relating to the ECB's share of euro banknotes and to the application and adjustment of the ECB capital key, as well as TARGET2 balances – are remunerated at the interest rate on the main refinancing operations. In 2022, these items generated interest income from 27 July onwards.

Foreign currency-denominated interest income received outside the euro area (EUR m)	2022	2021	Change
Interest income from coupon bonds	69.2	55.2	14.0
Income from discount papers	1.8	0.3	1.5
Interest income from deposits	0.3	0.0	0.3
Dividends from fund investments	27.4	25.7	1.7
Other interest income	74.2	1.9	72.2
Total	173.0	83.2	89.8

Euro-denominated interest income received outside the euro area (EUR m)	2022	2021	Change
Interest income from coupon bonds	–	–	–
Interest income from deposits	0.2	0.2	-0.0
Other interest income	13.0	20.3	-7.2
Total	13.2	20.5	-7.3

Foreign currency-denominated interest income received from the euro area (EUR m)	2022	2021	Change
Interest income from coupon bonds	3.1	3.1	0.1
Interest income from deposits	0.2	0.0	0.1
Other interest income	6.5	–	6.5
Total	9.8	3.1	6.7

Euro-denominated interest income received from the euro area (EUR m)	2022	2021	Change
Interest income from coupon bonds	–	–	–
Income from discount papers	–	0.1	-0.1
Interest income from deposits	0.1	0.0	0.1
Dividends on euro-denominated investments	4.1	3.9	0.1

Euro-denominated interest income received from the euro area (EUR m)	2022	2021	Change
ESCB items	334.4	–	334.4
Interest income from monetary policy lending	0.4	–	0.4
Interest income from monetary policy securities	305.2	200.6	104.5
Interest income from negative interest rates on credit institutions' deposits	262.8	633.4	-370.7
Other interest income	21.8	36.4	-14.6
Total	928.7	874.6	54.1

Total interest income (EUR m)	2022	2021	Change
Foreign currency-denominated interest income received outside the euro area	173.0	83.2	89.8
Euro-denominated interest income received outside the euro area	13.2	20.5	-7.3
Foreign currency-denominated interest income received from the euro area	9.8	3.1	6.7
Euro-denominated interest income received from the euro area	928.7	874.6	54.1
Total	1,124.7	981.3	143.3

2. Interest expense

Foreign currency-denominated interest expense paid outside the euro area (EUR m)	2022	2021	Change
Other interest expense	-53.9	-1.4	-52.5
Total	-53.9	-1.4	-52.5

Euro-denominated interest expense paid outside the euro area (EUR m)	2022	2021	Change
Other interest expense	-23.1	–	-23.1
Total	-23.1	–	-23.1

Foreign currency-denominated interest expense paid in the euro area (EUR m)	2022	2021	Change
Other interest expense	-0.0	–	-0.0
Total	-0.0	–	-0.0

Euro-denominated interest expense paid in the euro area (EUR m)	2022	2021	Change
Interest expense on monetary policy deposits	-403.5	–	-403.5
Interest expense on monetary policy lending	-167.3	-321.8	154.5
Other interest expense	-18.0	–	-18.0
Total	-588.8	-321.8	-267.0

Total interest expense (EUR m)	2022	2021	Change
Foreign currency-denominated interest expense paid outside the euro area	-53.9	-1.4	-52.5
Euro-denominated interest expense paid outside the euro area	-23.1	–	-23.1
Foreign currency-denominated interest expense paid in the euro area	-0.0	–	-0.0
Euro-denominated interest expense paid in the euro area	-588.8	-321.8	-267.0
Total	-665.8	-323.2	-342.6

3. Net interest income

Net interest income (EUR m)	31 Dec 2022	31 Dec 2021	Change
Interest income			
Financial assets	222.0	147.2	74.8
Monetary policy items	568.3	834.1	-265.8
ESCB claims	334.4	–	334.4
Total	1,124.7	981.3	143.3
Interest expense			
Financial assets	-95.0	-1.4	-93.6
Monetary policy items	-570.8	-321.8	-249.0
ESCB liabilities	–	–	–
Total	-665.8	-323.2	-342.6
NET INTEREST INCOME	458.9	658.1	-199.2

4. Foreign exchange rate differences

This item consists of realised exchange rate gains and losses arising from the sale of currency positions. In 2022, gains related to exchange rate movements amounted to EUR 59.4 million.

5. Securities price differences

This item consists of realised gains and losses arising from the sale of securities. In 2022, realised gains from the sale of securities amounted to EUR 18.9 million.

6. Valuation losses related to currencies and securities

This item consists of valuation losses related to currencies and securities. Securities and currencies are treated on a security-by-security and currency-by-currency basis. The market value of securities decreased as a result of the increase in the corresponding yields in 2022. This resulted in unrealised price losses on US dollar-denominated securities, in particular, but also on other foreign currency-denominated securities. At the year-end, valuation losses related to securities totalled EUR 244.0 million. There were no valuation losses related to currencies in 2022.

7. Change in foreign exchange rate and price difference provision

Owing to realised net losses arising from foreign exchange rate and price differences, totalling EUR 164.7 million, the foreign exchange rate and price difference provision was adjusted downward by an equal amount in accordance with the accounting policies. All provisions are specified in the notes on the balance sheet under liabilities.

8. Income and expenses on fees and commissions

The item consists of fees and commissions related to investment activities.

9. Net result of pooling of monetary income

Monetary income (EUR m)	31 Dec 2022	31 Dec 2021
Net monetary income pooled by the Bank of Finland	546.8	507.5
Net monetary income allocated to the Bank of Finland	131.1	21.5
Monetary income reallocation for the year	-415.8	-486.0
Corrections to monetary income reallocation of previous years	-6.3	2.8
Share of provision against counterparty risks	-	-
Total	-422.1	-483.1

This item contains the net result of pooling of monetary income for 2022, amounting to an expense of EUR 415.8 million in comparison to an expense of EUR 486.0 million in the previous year.

The amount of each Eurosystem NCB's monetary income is determined by measuring the annual income that derives from the earmarkable assets held against its liability base. Any interest paid on liabilities included within the liability base is to be deducted from the monetary income to be pooled. Where the value of a NCB's earmarkable assets exceeds or falls short of the value of its liability base, the difference shall be offset by applying to the value of the difference the latest available marginal rate for the Eurosystem's main refinancing operations.

The table below specifies the items that comprise the earmarkable assets and the liability base as well as the applicable remuneration rates.

Earmarkable assets	Remuneration rate	Liability base	Remuneration rate
Amount of gold holdings in proportion to each NCB's capital key share	0%	Banknotes in circulation	Not applicable
Claims equivalent to the transfer of foreign reserves to the ECB (except gold)	Main refinancing operations rate	Liabilities to euro area credit institutions related to monetary policy operations denominated in euro	Rate of return
Lending to euro area credit institutions related to monetary policy operations denominated in euro	Rate of return	Net liabilities arising from balances of TARGET accounts*	Main refinancing operations rate
CBPP, CBPP2, PSPP - government/agency bonds and PEPP - government securities	Main refinancing operations rate		
SMP, CBPP3, PSPP - Supra, CSPP and PEPP (excluding PEPP - government securities)	Rate of return		

Earmarkable assets	Remuneration rate	Liability base	Remuneration rate
Claims on non-Eurosystem central banks that relate to liquidity-providing operations	Actual interest income (including accruals)		
Accrued coupon interest related balances on impaired securities held for monetary policy purposes and for which full income/ risk sharing applies	Not applicable		
Net claims related to the allocation of euro banknotes within the Eurosystem*	Main refinancing operations rate		
Accrued interest relating to regular monetary policy operations with a maturity of over 1 year	Not applicable		

* Depending on the NCB these components maybe presented on the earmarkable asset side or liability base

The monetary income pooled by the Eurosystem is allocated among NCBs according to the subscribed ECB capital key. The difference between the monetary income pooled by the Bank of Finland amounting to EUR 546.8 million and reallocated to the Bank of Finland amounting to EUR 131.1 million is the net result arising from the calculation of monetary income.

10. Share in ECB profit

The ECB distributed EUR 41.7 million profit for the financial year 2021, of which the Bank of Finland's share recorded for the financial year 2022 totalled EUR 0.8 million.

11. Income from other equity shares and participating interests

The item consists of dividends received on shares in the BIS, EUR 3.7 million.

12. Other income

This item consists of income of the Financial Supervisory Authority (FIN-FSA), EUR 38.7 million. The item also includes income from real estate, EUR 5.3 million, and commissions and fees.

13. Staff costs

Staff costs (EUR m)	31 Dec 2022	31 Dec 2021
Salaries and fees	50.3	49.6
Employer's contributions to the pension fund	9.8	9.4
Other staff-related costs	2.3	2.1
Total	62.3	61.1

Average staff size	2022 Number of staff	2021 Number of staff
Bank of Finland	373	368
Financial Supervisory Authority	246	239
Total	619	607

Basic salaries paid to the members of the Board (EUR)	2022
Olli Rehn	284,802
Marja Nykänen	258,644
Tuomas Välimäki	209,705
Total	753,151

Fringe benefits (meal benefits, company-paid telephone and company car) paid to the members of the Board totalled EUR 43,275.17.

Pension provision for the Bank of Finland's employees is governed by the Public Sector Pensions Act (81/2016). A former board member may be paid compensation for income loss if the person may not, due to the provisions on the waiting period, accept employment from elsewhere or if the pension from the Bank of Finland is less than the compensation for income loss. Full compensation for income loss amounts to 60% of salary and is paid for one year, adjusted with the pension paid by the Bank, so that the sum of full compensation and pension does not exceed 60% of salary.

14. Pension fund contribution

Approved by the Parliamentary Supervisory Council, the Bank of Finland paid a contribution of EUR 10 million to the Bank's pension fund in 2022 to cover the pension fund's deficit for the financial year.

15. Administrative expenses

Administrative expenses (EUR m)	31.12.2022	31.12.2021
Supplies and purchases	0.4	0.5
Machinery and equipment	7.5	7.4
Real estate	9.7	8.9
Staff-related expenses	2.4	1.0
Purchase of services	15.6	15.1
Other	2.4	2.3
Total	38.0	35.2

This item consists of rents, meeting and interest group-related costs, expenses arising from the purchase of services and cost of equipment. Expenses arising from training, travel and recruitment of staff are also recorded under this item.

16. Depreciation of fixed assets

Depreciation of tangible fixed assets (EUR m)	31 Dec 2022	31 Dec 2022
Buildings	3.8	3.7
Machinery and equipment	2.7	2.6
Total	6.5	6.2

Depreciation of intangible fixed assets (EUR m)	31 Dec 2022	31 Dec 2021
IT systems	3.2	2.8
Total	3.2	2.8

17. Banknote production services

Costs related to banknote production services totalled EUR 6.0 million.

18. Other expenses

The majority of other expenses relate to collection costs, exchange rate and rounding differences and other similar costs.

19. Income of the pension fund

This item consists of the Bank of Finland's and the FIN-FSA's employer contributions and employees' share of premium income, totalling EUR 13.6 million, and the contribution of EUR 10 million paid by the Bank to the pension fund. The item also includes interest income on the pension fund's investment activities, EUR 3.3 million, and income on the fund's real estate, EUR 1.7 million.

20. Expenses of the pension fund

This item consists of pensions paid, EUR 29.2 million, the pension fund's management costs and depreciation of the fund's fixed assets.

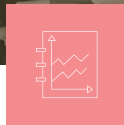
21. Changes in provisions

This item consists of a reduction of the general provision, EUR 47 million. All provisions are specified in the notes on the balance sheet under liabilities.

22. Profit for the year

Profit for the financial year 2022 totalled EUR 0.00.

1) Decision of the Governing Council of 27 October 2022.



Appendices to the financial statements

31.12.2022

EUR million	31 Dec 2022	31 Dec 2021
Shares and other interests, nominal value		
Bank for International Settlements (BIS) ¹	22.4 (1.96%)	22.4 (1.96%)
Shares in housing companies	0.2	0.2
Other shares and interests	0.0	0.0
Total	22.6	22.6
Bank of Finland's liability share in the Finnish Central Securities Depository Fund	0.3	0.3
Liability arising from pension commitments		
Bank of Finland's pension liability ²	569.5	547.7
– of which covered by provisions	573.1	576.1

1) In parentheses, the Bank of Finland's relative holdings of the BIS shares in circulation.

2) Pension liability for 2022 includes indexation of pensions and paid-up policies entering into force on 1 January 2023.

The Bank of Finland's real estate

Building	Address	Year of completion	Volume m ³ (approx.)
Helsinki	Rauhankatu 16	1883/1961/2006	52,108
	Rauhankatu 19	1954/1981	40,487
	Snellmaninkatu 6 ¹	1857/1892/2001	23,600
	Snellmaninkatu 2 ¹	1901/2003	3,225
	Ramsinniementie 34	1920/1983/1998	4,800
Vantaa	Turvalaaksontie 1	1979	334,243
Inari	Saariseläntie 9	1968/1976/1998	6,100

1) Transferred to the ownership of the Bank of Finland's pension fund from the beginning of 2002.



Notes on risk management

31.12.2022

Risk management and control of risks in investment of financial assets

Investment activities are exposed to risks, which risk management seeks to identify, measure and limit. In managing these risks, the Bank of Finland uses widely employed risk management methods, market and credit risk models as well as sensitivity analyses.

Risk management of investment activities by the Bank of Finland has been entrusted jointly to the Administration department's Risk Control and Financial Accounting division and the Market Operations department. Risk control of investment activities and reporting on risks and returns are the responsibility of the Administration department's Risk Control and Financial Accounting division.

Risks to investment activities are reported daily to the persons involved in operational investment activities and monthly to the Bank of Finland Board. Developments in investment returns are reported monthly to the persons involved in investment activities and the Board member responsible for investment activities. Returns are considered every quarter in the Markets Committee, chaired by the Board member responsible for investment activities. The Board discusses risks and returns twice a year. Cases of non-compliance with the limits imposed are reported immediately. A report on total financial risks is submitted to the Board at quarterly intervals.

Decision-making framework for investment of financial assets and risk management, and various risk committees

Decisions on investment of financial assets and related risk management are taken by the Bank of Finland Board, the Markets Committee and, in the case of operational matters, also by the Investment Group and the Risk Group.

The Board is responsible for decisions on the objectives of investment activities, investment policy as well as risk management and principles for responsible investment. Such decisions relate, among other things, to the size of the Bank's own financial assets and foreign reserves, currency distribution of foreign reserves, long-term investment activity, the strategic allocation of the fixed-income investment portfolio by investment category, the leeway permitted in fixed-income investment activities by investment category and the level of interest rate and credit risks. The Board also decides on maximum credit risk limits.

Within the limits imposed by the Board, the Markets Committee makes detailed decisions on the investment of the Bank's financial assets and risk management. Such decisions include the criteria for counterparties and issuers and more specific credit risk limits. The chair of the Markets Committee, who is also responsible for decision-making on the Committee, is the Board member responsible for the Bank of Finland's own investments.

The emphasis of work in the Investment Group and the Risk Group is on the preparation of matters to be considered by decision-making bodies. In addition, the Investment Group acts as an internal decision-maker within the Market Operations department and as coordinator of matters common to the investment and risk control functions. Decisions on new counterparties to investments are taken mainly by the Investment Group or in exceptional cases by the Markets Committee. The Head of Market Operations chairs the Investment Group and makes decisions therein. The Head of the Administration department's Risk Control and Financial Accounting division chairs the Risk Group and makes decisions therein.

In addition to the decision-making bodies specified above, the Bank of Finland also has an internal working group on responsible investment. The working group makes decisions on the companies to be excluded from or brought back within the scope of the Bank's investment activities. These decisions are based on responsible investment principles and are taken using analyses of an external service provider.

The Bank of Finland has a Financial Risks Committee which, independently of the management of financial assets is tasked with supporting the Board by supervising and assessing financial risks that may affect the Bank's balance sheet. The committee is not a decision-making body but instead gives recommendations and may submit matters to the Board for information or decision, as necessary. The Financial Risks Committee is chaired by the Board member responsible for risk control.

The Bank of Finland also has an Operational and Cyber Risks Committee. The task of the committee is to evaluate the Bank's level of operational and cyber risks management and to give instructions and make recommendations on development of risk management procedures. Similarly to the Financial Risks Committee, the Operational and Cyber Risks Committee is not a decision-making body but instead gives recommendations and submits matters to the Board for information or decision, as necessary. The Operational and Cyber Risks Committee is chaired by the Board member responsible for risk control.

Risk measures and breakdowns

Breakdown of debt instruments and deposits in the Bank of Finland's financial assets, by credit rating¹

Credit rating	31 Dec 2022 EUR m	31 Dec 2021 EUR m
AAA	2,721	3,077
AA+	710	437
AA	50	44
AA-	303	366
A+	1,165	1,260
A	281	205
A-	89	137
BBB+	36	47
BBB	8	14
BBB-	-	-
Alle BBB-	-	-
No credit rating	300	82
Total	5,662	5,670

1) Covered bonds have been classified according to their own credit rating, not that of the issuer. The Bank of Japan has been rated according to the government's credit rating. Due to changes to the methodology for determining credit ratings, the values for the reference period have been recalculated.

Totals may not add up due to rounding.

Breakdown of debt instruments and deposits in the Bank of Finland's financial assets, by home country of issuer/counterparty (according to market value)

Country or region (EUR m)	31 Dec 2022	31 Dec 2021
Euro area	81	214
Netherlands	48	75
Austria	20	67
France	9	19
Germany	4	53
Rest of Europe	656	852
Sweden	283	347
United Kingdom	256	290
Norway	75	116
Denmark	32	81
Switzerland	9	18
America	3,197	2,977
United States	2,775	2,477
Canada	422	500
Asia and Oceania	1,096	1,151
Japan	1,065	1,111
South Korea	22	22
Australia	9	18
International institutions	632	477
Total	5,662	5,670

Totals and subtotals may not add up due to rounding.

Sensitivity of the Bank of Finland's financial assets to market changes

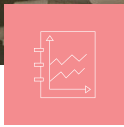
EUR m	2022	2021
Change in the value of the Bank of Finland's financial assets after appreciation of the euro exchange rate by 15% relative to foreign reserve currencies and gold as at 31 Dec	-1,403	-1,387
Change in the value of the Bank of Finland's financial assets after an interest rate rise of 1% as at 31 Dec	-109	-109
Change in the value of the Bank of Finland's equity funds after a decrease in the value of equity funds by 25%	-332	-378

Allocation of the Bank of Finland's fixed-income investment portfolios at the end of 2022

Fixed-income investment portfolios	Allocation at year-end (%)
Government debt instruments and central bank deposits	58.9
Government-related debt instruments	25.3
Covered bonds	4.1
Corporate bonds	11.4
Cash holdings	0.3
Total	100.0

Definitions and concepts

- **Market risk** means the risk that the net value of assets will decline due to changes in market prices. Market price changes refer to changes in, for example, interest rates, exchange rates, the price of gold or stock prices, which are referred to as interest rate risk, exchange rate risk, gold price risk or equity risk, respectively.
- **Credit risk** means the risk of financial losses arising from changes in the creditworthiness of a counterparty to a financial transaction or a securities issuer or from default by a counterparty or issuer.
- **Liquidity risk** means the risk that assets cannot be made available when the need arises or their conversion into cash causes additional costs.
- **Operational risk** refers to risk of extra costs or losses resulting from inadequate or failed internal processes, personnel, systems or external events.
- **Investment portfolio** consists of foreign currency-denominated and euro-denominated fixed-income investment portfolios and long-term investments. Its objective is to safeguard the value of financial assets and the Bank of Finland's ongoing ability to meet with its central bank commitments.
- **Foreign reserves** consist of unhedged foreign-currency investments and claims. These include the foreign-currency fixed-income investment portfolio and net receivables from the IMF.
- **Cash** refers to covered and uncovered short-term bank deposits.
- **Modified duration** is a measure of interest rate risk, indicating how much the value of a fixed-income investment or investments changes in response to a small change in interest rates. For example, if the modified duration is 2 and interest rates rise by 1%, the value of fixed-income investments falls by 2%.
- **VaR figure** at a certain confidence level means a loss in excess of which a loss occurs with a probability corresponding to the confidence level in question, over a target horizon. For example, if VaR 99% on a one-day horizon is EUR 3 million, this means there is a 1% probability that the current day's result will be worse than a loss of EUR 3 million (and a 99% probability that the result will be better).
- **Expected shortfall (ES)** at a certain confidence level indicates the size of the expected loss in the event that the loss exceeds the VaR-level loss for that confidence level. For example, with an ES of 99%, this corresponds to the average loss in a 1% risk event.



Auditor's report

3.3.2023

In our capacity as the auditors elected by Parliament, we have audited the accounting records, financial statements and administration of the Bank of Finland for the financial year 2022 in accordance with generally accepted auditing standards.

During the financial year the Bank's Internal Audit audited the Bank's accounting records and activities. We have examined the internal audit reports.

We have read the Bank's annual report and received representations from the Board concerning the Bank's activities.

The financial statements have been drawn up in accordance with the principles of financial statements approved by the Parliamentary Supervisory Council and current rules and regulations. The financial statements give a true and fair view of the Bank's financial position and results.

We propose that the profit and loss account and balance sheet for the financial year audited by us be approved. We recommend that the profit for the financial year be disposed of as proposed by the Board.

Helsinki, 3 March 2023

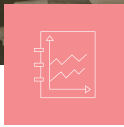
Mika Kari

Katri Kulmuni

Jukka Kopra

Lotta Kauppila,
Authorised Public Accountant, Secretary

Timo Tuokko,
Authorised Public Accountant



Statement regarding the audit

28.2.2023

Statement regarding the audit as defined in Article 27 of the Statute of the European System of Central Banks and the European Central Bank

To the Bank of Finland

Report on the audit of financial statements

Opinion

We have audited the financial statements of the Bank of Finland (business identity code 0202248-1) for the year ended 31 December 2022. The financial statements comprise the balance sheet, the profit and loss account and notes.

In our opinion, the financial statements give a true and fair view of the Bank of Finland's financial position and results, in accordance with the Accounting Principles and Methods approved by the Governing Council of the European Central Bank and the Act on the Bank of Finland, and comply with statutory requirements.

Basis for opinion

We conducted our audit in accordance with good auditing practice in Finland. Our responsibilities under good auditing practice are further described in the '*Auditor's responsibilities for the audit of the financial statements*'.

We are independent of the Bank of Finland in accordance with the ethical requirements that are applicable in Finland and are relevant to our audit, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of the Board of the Bank of Finland for the financial statements

The Board of the Bank of Finland is responsible for the preparation of financial statements that give a true and fair view of the Bank of Finland's financial position and results, in accordance with the laws and regulations governing the preparation of the Bank's financial statements, and that comply with statutory requirements. The Bank of Finland Board is also responsible for such internal control as it determines necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Bank of Finland Board is responsible for assessing the Bank's ability to continue as going concern, disclosing, as applicable, matters relating to going concern and using the going concern basis of accounting. The financial statements are prepared using the going concern basis of accounting unless there is an intention to liquidate the Bank or cease operations, or there is no realistic alternative but to do so.

Auditor's responsibilities for the audit of financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with good auditing practice will always detect material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with good auditing practice, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Bank's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of the Bank of Finland Board's use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Bank's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Bank to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events so that the financial statements give a true and fair view.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Helsinki, 28 February 2023
KPMG OY AB
Juha-Pekka Mylén
Authorised Public Accountant



Organisation

24.3.2023

Parliamentary supervisory council

Chair

Antti Lindtman

Vice Chair

Toimi Kankaanniemi

Mari Holopainen

Kalle Jokinen

Esko Kiviranta

Markus Mustajärvi

Petteri Orpo

Pia Viitanen

Ville Vähämäki

Secretaries to the Parliamentary Supervisory Council

Kimmo Virolainen

Anne Hedman

Board

Governor

Olli Rehn

Deputy Governor

Marja Nykänen

Member of the Board

Tuomas Välimäki

Secretary to the Board

Elisa Newby

Departments

Monetary Policy and Research

Juha Kilponen

Forecasting

Meri Obstbaum

Institute for Economies in Transition (BOFIT)

Iikka Korhonen

Monetary Policy and International Economy

Markku Lehmus

Research

Esa Jokivuolle

Financial Stability and Statistics

Katja Taipalus

Macroprudential Analysis

Helinä Laakkonen

Financial Statistics

Elisabeth Flittner

Macroprudential Policy

Hanna Freystätter

Statistical Analysis and Information Services

Harri Kuussaari

Market Operations

Juha Niemelä

Monetary Policy Implementation

Niko Herrala

Asset Management

Jarno Ilves

Banking Services

Teemu Peltoniemi

Counterparties and Collateral

Marjaana Hohti

Payment Systems

Päivi Heikkinen

Cash Division

Heli Snellman

Fintech Section

Aleksi Grym

Oversight of Market Infrastructure

Jussi Terho

General Secretariat

Elisa Newby

International Affairs

Satu Kivinen

Communications

Jenni Hellström

Legal Affairs

Jutta Koivisto

Strategy and Organisation

Assistant Services for the Board

Administration

Veli-Matti Lumiala

Administrative Services

Hannu Vesalainen

Risk Control and Financial Accounting

Antti Nurminen

Personnel and Financial Control

Antti Vuorinen

Security and Property Management

Marko Lavikkala

Language Services

Eija Puttonen

ICT and Information Management

Petteri Vuolasto

Bank of Finland IT Services

Petri Salminen

Financial Supervision IT services

Kirsti Ikonen

Shared IT Services

Sami Kirjonen

Shared Information Management Services

Mia Ristimäki

- Content Management Services
- Document Management Services
- Library and Information Services

Internal Audit

Helena Rantanen

The Financial Supervisory Authority, headed by Tero Kurenmaa, operates in association with the Bank of Finland.