EESTI PANK ANNUAL REPORT 2022

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2022 marked the 30th anniversary of monetary reform in Estonia and the launch of the Estonian kroon, one of the symbols of the restoration of Estonian independent statehood. The Eesti Pank Annual Report 2022 is illustrated with Estonian kroon banknotes that were in circulation in 1992-2010.

CONTENT

FOREWORD TO THE EESTI PANK ANNUAL REPORT 2022

The challengingly high inflation in 2022 will not have escaped anybody's notice, and the rate in Estonia was among the highest in the euro area as the consumer price index rose on average above its 2021 level by as much as 19.4%. The last time Estonia saw inflation that high was in 1996.

The main cause of inflation throughout the euro area was the rising price of energy, which was driven higher by Russia's invasion of Ukraine. Food price inflation accelerated towards the end of the year, while the strength of the labour market and the recovery in demand after the pandemic also helped drive inflation higher.

Double-digit inflation is far above the target set by the central banks of the Eurosystem of keeping inflation at 2% over the medium term. Inflation being too high means the purchasing power of money drops rapidly, and so there is greater instability in the economic environment, which can affect consumption, confidence, investment decisions and much more.

Higher interest rates restrain inflation

It is the task of the central bank to maintain price stability, meaning that inflation should be predictable and moderate. This duty was at the root of the rapid and substantial change in the monetary policy of the European Central Bank in 2022. This was primarily evident in our decisions to raise base interest rates in the euro area, which had previously been held at very low levels for a long time to revive the economy and to raise low inflation.

By changing the interest rate, the central bank changes the price and the availability of money for businesses and households. This lets the central bank guide the overall level of economic activity and so indirectly affect inflation pressures. Cheap loans give a boost to the economy, while a higher cost of borrowing slows growth.

At the Governing Council of the European Central Bank, we raised interest rates four times in 2022 by a total of 2.5 percentage points. This was the fastest rise in interest rates in the history of the euro area. The central bank forecast that inflation will remain notably above its target of 2% in the coming years as well, and so we will quite probably have to raise interest rates even further.

We understand that these decisions mean that growth in the economy will be slower and unemployment may rise, and that the loan repayments of businesses and households will be bigger, but if the European Central Bank did not raise interest rates and inflation picked up broadly, the consequences would be even harsher as interest rates would in the end have to rise even higher and for longer. Raising interest rates earlier rather than later means that we can apply the brakes to inflation that much quicker.

As well as raising interest rates, we have also applied another measure to restrain inflation. The central banks of the euro area have started to wind down their asset purchases, which have seen them buy various bonds in order to increase the amount of money circulating in the economy and so boost economic activity. Inflation rising faster means that that it is no longer reasonable to follow that policy.

The risks to financial stability in Estonia increased

The risk of businesses and people falling into financial difficulties and being unable to manage their loan repayments increased in Estonia in 2022. The main reason for this is that demand for the products and services produced by businesses has declined and people are facing a greater risk of losing their jobs. This means the danger to financial stability, or the smooth operation of finance, has increased, as the probability has risen of some businesses and people having difficulties in meeting their loan obligations. Ensuring financial stability is one of the main functions of the central bank both in normal times and during a crisis.

There is no cause for excessive pessimism though, as the amount of housing loans that had not been paid on time at the end of 2022 was the smallest for 20 years. The ability to repay loans has been shored up by low unemployment and the savings that were built up during the pandemic restrictions of recent years.

If the macroeconomic circumstances should deteriorate sharply though, more serious problems in repaying loans could arise, which is why Eesti Pank considered it necessary to raise the countercyclical capital buffer requirement from its current 1% to 1.5% from 1 December 2023, to ensure that banks have larger capital reserves. Eesti Pank also decided to raise the systemically important institution capital buffer requirement for LHV Pank from 1.5% to 2%, as the assets and the market share of the bank have grown rapidly.

Given the rapid rise in real estate prices and growth in housing loans, Eesti Pank assessed in 2022 whether the restrictions on the banks on issuing housing loans that were established in 2015 were still sufficient. The main conclusion of the analysis was that the requirements have achieved their goal and helped avoid excessively risky lending. As clear signs of the rate of growth in housing loans slowing became apparent in autumn as the economic climate deteriorated, Eesti Pank did not consider it necessary to tighten the requirements.

Being ready to do our core tasks in a crisis

The risks to financial stability have increased, but even more worrying is the instability caused by the war in Ukraine. Estonia is well defended as a member of the European Union and NATO, but having an aggressive direct neighbour means we must be ready for any unexpected event. It is a strategic goal of Eesti Pank to be ready to carry out its duties in the event of a crisis and to ensure the functioning of payments and cash circulation in an emergency.

Eesti Pank is by law the organiser of vital services, while the credit institutions are the providers of the vital service, and so they have to make sure that the service operates. Eesti Pank reviews the risk analysis and business continuity plans of the credit institutions and organises tests and exercises for the continuity of cash circulation.

Eesti Pank ran two business continuity tests for cash in 2022 that practised operations during an emergency. Both tests were successful and we will be able to use the experience gained from them in strengthening organisational resilience and continuity. Eesti Pank also contributed in 2022 to developing the legal framework for the continuity of cash circulation.

The unstable security situation focused particular attention on the security of payment services. The probability of such dangers being realised is small, but if it did happen then the impact would be extremely large. We consequently took an active part in writing the legislation for crisis readiness, with a particular eye to how people can access their money and make payments even in the most serious emergency. One of our proposals was to bring all the banks providing payment services and the more important non-bank payment service providers into the group of providers of vital payment services.

The central bank has become more visible and more open

High inflation and questions about the causes and impact of it have increased public interest in the positions taken by Eesti Pank. Our analysis, forecasts and other information have been reported and echoed widely. It is a goal of Eesti Pank to promote public discussion of economic policy within the country, and so we have set up additional channels through which people can follow our seminars and presentations of research work and other economic reviews, so that as many as possible of those who are interested can take part.

June saw the 30th anniversary of the monetary reform that laid the cornerstone for the rapid development of the Estonian economy and its integration with Europe. We marked this anniversary in several ways. One was that we organised a public seminar at which the Vice-President of the German central bank Claudia Maria Buch spoke about her impressions of social processes 30 years ago.

The public lecture given by President of the European Central Bank Christine Lagarde as part of the lecture series dedicated to the Estonian economist Ragnar Nurkse received a lot of attention, and she spoke about the causes of high inflation and what the central bank can do about it.

There was also a lot of close cooperation at official levels. Members of the Executive Board of the central bank met throughout the year with the President of the Republic, the Prime Minister, the Minister of Finance, and members of the Riigikogu, and with other representatives of the public sector. The bank was also involved in the work of several Riigikogu committees, while meetings continued to be held regularly with businesses and their associations and representative organisations, including the Estonian Banking Association.

There was a lot of interest in our collector and commemorative coins. Of particular note among the coins issued in 2022 was the two-euro commemorative coin for Ukraine and Freedom that was issued in support of Ukraine and was designed by Daria Titova, a refugee from Kharkiv who was continuing the studies that have been interrupted in Ukraine at the Estonian Academy of Arts. The money earned from sales of the coin card containing the two-euro coin dedicated to Ukraine was transferred to the Ukrainian central bank, which was able to direct it to where it was most needed.

Eesti Pank is environmentally aware

We first took great strides in integrating climate awareness and sustainable development in our everyday activities in 2021. Two goals were set then to be achieved in 2022, which were to measure the carbon footprint of the organisation, and to meet the criteria for a green office certification for environmental responsibility.

The carbon footprint of Eesti Pank and Finantsinspektsioon, which share premises, was completed in 2022. The board of the bank has approved a programme of specific measures to reduce the carbon footprint of the central bank further in stages over the coming years. We can be proud that our efforts to be environmentally aware have been so well organised that the buildings of the bank received certification as a green office, and that the Estonian Association for Environmental Management declared us the best green office of the year. A clear target has been set for the Eesti Pank investment portfolio of achieving climate neutrality.

Our staff have a high opinion of Eesti Pank

And finally, Eesti Pank needs to develop constantly as an organisation to reflect better the changing environment and new forms of work, and to improve the results of work at the bank. There was more and more participation in training, and we focused attention on having a working environment that is highly motivating. We updated the wording of our organisational values in 2022, and everybody working at the bank was invited to be part of that process.

The latest survey of satisfaction among the staff of Eesti Pank shows that the central bank is seen as an institution with a good reputation, where top experts in their field work in a friendly working environment. With this cohesive and professional team we are ready to give our absolute best to achieve successfully all the tasks that are given to Eesti Pank. The most important of those tasks is clearly the effort to tame high inflation in Estonia and in the rest of the euro area.

THE MISSION, VISION AND FUNCTIONS OF EESTI PANK

The bank as an organisation

Eesti Pank is the central bank of the Republic of Estonia and is a member of the European System of Central Banks. Eesti Pank acts independently of other state institutions and carries out the tasks set for it by law. The primary objective of the central bank is to maintain price stability.

Eesti Pank's mission

Eesti Pank as a central bank of the euro area contributes to the sustainable development of the Estonian economy and to increased prosperity for Estonia by keeping inflation moderate, the financial sector stable, and cash circulation functioning.

Eesti Pank's vision

The positions and actions of Eesti Pank have an impact both in Estonia and abroad. Eesti Pank is an efficient and innovative organisation and is the most highly regarded authority in Estonia on questions of finance and the economy at the macro level.

THE MAIN FUNCTIONS OF EESTI PANK

ACTIVITIES OF THE SUPERVISORY BOARD OF EESTI PANK IN 2022

The world, Estonia and Eesti Pank faced serious challenges in 2021, but the challenges faced in 2022 were even greater again. The full-scale military attack that Russia launched against Ukraine on 24 February 2022 disrupted the whole organisation of the global economy, which is now very unlikely ever to return to its earlier framework. The energy crisis was compounded by rising inflation that caused the European Central Bank to raise interest rates. Blockages in supply chains made the overall difficulties in the economy even worse, and combined with record levels of inflation and the energy crisis to provoke a sharp spike in general uncertainty. The change in the security picture led to increased state spending on national defence. Under these circumstances the Supervisory Board of Eesti Pank supported the Executive Board in maintaining peace and stability and in pursuing a credible monetary policy.

The Eesti Pank Supervisory Board discussed with the management of the bank how prepared the bank was in the new security environment, paying particular attention to possible cyber risks. The Supervisory Board also helped the Executive Board take steps to support Ukraine in its battle against the Russian invasion. A two-euro commemorative coin dedicated to Ukraine and Freedom was issued with great efficiency and put into circulation at lightning speed. The coin was extremely popular and helped promote awareness of Ukraine's fight against Russia's attacks, and it earned half a million euros in revenues for the Ukrainian central bank.

The meetings and seminars of the Supervisory Board discussed in great detail and depth the problems caused by the unacceptably high rate of inflation in Estonia and elsewhere in euro area.

The Board encouraged the Eesti Pank management to identify and apply all the measures available to central banks for bringing inflation down to its target of 2% set by the European System of Central Banks.

The Supervisory Board had nine regular meetings in 2022, and on one occasion accepted a decision taken as a result of a survey, which was to approve the design of the two-euro commemorative coin for Ukraine and Freedom. The Board also held three seminars as an additional forum for its work.

The Riigikogu appointed Ivi Proos as a member of the Eesti Pank Supervisory Board from 22.02.2022 following the early termination of Kaie Kerem's mandate. After Andres Sutt was released from his duties as a member of the Government of the Republic, the Riigikogu reappointed him as a member of the Eesti Pank Supervisory Board from 27.09.2022, and so terminated the mandate of Jürgen Ligi.

SUPERVISION OVER THE WORK OF THE EXECUTIVE BOARD OF EESTI PANK

The Supervisory Board heard a review of Eesti Pank's financial results for 2021 and approved the annual report proposed by the Governor for 2021. The Chair of the Board presented the approved report together with a report on the activities of the Supervisory Board to the Riigikogu.

The Board decided to continue with the Eesti Pank profit distribution strategy of transferring up to 25% of profit into the state budget each year and using the remainder to build up the capital buffers. The Supervisory Board repeatedly discussed in its meetings the changes that Russia's invasion of Ukraine had brought to the global economy, and the consequent risks. The discussions concluded that the profit distribution strategy followed by Eesti Pank so far had proven very effective, as it had allowed the bank to build up sufficient buffers to offset the fluctuations in its income caused by the volatility in global equity and bond markets. Following this strategy had not been negative for the Eesti Pank capital buffers, and Eesti Pank has not needed to be recapitalised by the state in order to carry out its functions. This shows that the proper distribution strategy has contributed to maintaining the financial and institutional independence of Eesti Pank.

The Board heard the Executive Board's reports for 2021 and the first half of 2022, and praised the quality of the reporting and the work done.

The Board considered the Eesti Pank strategy and acknowledged the changes to the strategy, recognising the timeliness of the strategy document and its improved presentation.

It also heard the risk management report, including its review of the business continuity and resilience tests. The Board emphasised repeatedly the importance of mitigating cyber risks in the work of the bank.

Following best practice in management, the Board also met the Governor of Eesti Pank and the head of the internal audit department informally.

At the last meeting of the year, the Governor of the bank presented the draft budget for 2023 to the Board. The Board acknowledged the draft budget and considered it appropriate in the changed circumstances.

INTERNAL AUDIT

The Board heard reports from the internal audit department on its execution of the work plan and was satisfied with the progress in performance audits. The Board recognised that the effective cooperation between the Executive Board and the internal audit had held down the number of internal audit recommendations and led to them being processed quickly. The Supervisory Board keeps constant watch on the effectiveness of the internal audit and considers its operation to be very important to the success of Eesti Pank. The Board gave a positive assessment of the work of the internal audit.

PARTICIPATION IN DECISION-MAKING IN THE EUROSYSTEM AND IN IMPLEMENTING DECISIONS

The Governor of Eesti Pank gave the Supervisory Board a review of the work of the European System of Central Banks at each meeting of the Board, covering how single monetary policy is set and the operation of single banking supervision. The Executive Board presented the Eesti Pank forecasts that were prepared as part of the joint broad macroeconomic projection exercise (BMPE) forecast produced with the European Central Bank and the other central banks of the Eurosystem. The Board also heard the Eesti Pank spring and autumn forecasts, which focused on the Estonian economy and were expanded because of the political and economic uncertainty.

FINANCIAL STABILITY

The Board heard reviews of economic development, financial stability, the funding of the economy, and the labour market. There was discussion about applying updated Eesti Pank measures for financial stability.

CONSULTATION AND COOPERATION ON QUESTIONS OF ECONOMIC POLICY

The Board heard reports on the work of the Fiscal Council twice in 2022, covering its annual report and its assessments of the state budget being drawn up. The Fiscal Council declined to approve the official economic forecast of the Ministry of Finance for the first time this year, after which the Ministry adjusted its forecast.

The Eesti Pank Supervisory Board recognised the work of the Fiscal Council and gave a positive assessment of the active positions taken by the council members in the media. This allowed the positions on balance in the state budget to be presented to a wider public together with the economic forecasts. The Supervisory Board considers it important that the Fiscal Council continue to engage in dialogue with the government about achieving fiscal balance, and equally that it present its position in the media and inform the public of its opinions.

ORGANISATION

The Supervisory Board kept abreast of the work of the departments of Eesti Pank. Heads of department and senior staff members presented their work on topics like the outlook for inflation and the factors affecting inflation in Estonia, the digital euro and the development of the payments environment, ways that the central bank can accommodate climate risks in its activities and help make the economy more sustainable, improving energy efficiency at the bank, and becoming a green office.

The Governor of Eesti Pank presented the results of the satisfaction survey carried out among employees to the Board.

APPOINTMENTS TO OFFICE

The supervisory Board appointed Rein Minka as a member of the Supervisory Board of Finantsinspektsioon.

COLLECTOR COINS AND CASH

The Supervisory Board approved the national side of two two-euro commemorative coins in 2022 and the designs for three silver collector coins, and it considered the programme for issuing collector and commemorative coins for 2024-2025.

The Board approved the proposal by the Executive Board to mint and issue at high speed a two-euro commemorative coin dedicated to Ukraine and Freedom. The money earned from sales of the coin card went to the Ukrainian central bank. The Board recognised the initiative of the Executive Board to design the coin for Ukraine at speed and release it into circulation.

ASSESSMENTS OF THE MANAGEMENT ACTIVITIES AT EESTI PANK IN 2022

The Supervisory Board supported Eesti Pank in its role in advising the government on economic policy. Having heard the presentations by the Governor of Eesti Pank on the economy in the euro area, the Supervisory Board declared its support for the monetary policy stance of the Governor.

The Supervisory Board considered that the visit of the President of the European Central Bank Christine Lagarde to Estonia at the invitation of Governor Madis Müller was successful, as was her presentation to the public of the messages and assessments of the European System of Central Banks. The Board very much appreciated that the important conferences on economics and other high-level economic policy exchanges organised by Eesti Pank were transmitted online on the Eesti Pank channels. This allowed journalists, businesses, public sector employees, and anyone else from the general public who is interested in the economy to attend the discussions virtually and to take part in them.

The Board recognised the commemoration by the Executive Board of the 30th anniversary of the Estonian kroon, which gave Eesti Pank the chance to hold public discussions about monetary policy.

The Supervisory Board considered that the bank's unceasing efforts to raise the level of cyber security remain very important.

The Board also supported the work of the bank in achieving its green targets for environmental sustainability.

THE STATE OF THE ECONOMY

THE GLOBAL ECONOMY

Growth in the global economy slowed in 2022

The International Monetary Fund estimates that growth in the global economy slowed to 3.4% in 2022 after it had recovered rapidly from the Covid-19 pandemic in 2021 as restrictions on activity were lifted in many parts of the world. The global economy was hit by a series of unexpected shocks in 2022. Russia started a full-scale war in Ukraine in February that caused a change in terms of trade and a sharp rise in the prices of energy and food. This then caused inflation to rise and consumers to lose purchasing power almost everywhere around the world. Covid-19 was still spreading widely in the first half of the year, and China applied strict coronavirus restrictions until the end of the year.

Central banks tightened monetary policy

Central banks started to tighten monetary policy sharply and reduce their balance sheets in order to combat high inflation. This made financing conditions more restrictive than before and made global financial markets volatile. Tighter monetary policy and the impact of Russia's war in Ukraine and other geopolitical conflicts together led to a reduced global appetite for risk and raised the costs of borrowing for poorer countries. Higher food prices also affect the populations of poorer countries more, as energy and food are a larger part of the consumer basket there than they are in economically more advanced countries. The greater vulnerability of those countries to changes in the external environment consequently exacerbates the risk of escalating debt problems and capital outflows. The International Monetary Fund estimates that around 15% of poor countries have already become insolvent or were close to doing so in 2022.

The changed economic circumstances pose challenges for central banks

Central banks need to remember that fighting against inflation is not the only challenge. The higher interest rates climb, the more sensitive financial markets become to all sorts of unfavourable fiscal policy events. A loss of confidence in the sustainability of sovereign debt, leading to a notable rise in the risk premiums for bonds, could cause a range of linked problems in the financial sectors in developing countries as well as in advanced countries.

THE EURO AREA

The war between Russia and Ukraine led to an energy crisis

Russia's invasion of Ukraine in early 2022 and the consequent full-scale war within Europe was at first a major shock to the economy of the euro area, as several countries in the euro area were heavily dependent on Russian energy and fuels, especially gas. It was feared that if governments were unable to find alternative supplies to compensate for the reduction in supplies of Russian gas, there would be a danger that some countries would start to ration gas. This would probably have caused restrictions on the use of gas in the industrial sector, which would have led to quite a sharp fall in output, especially in Germany, where production is more dependent on Russian gas. This all caused major uncertainty in the economy and confidence for companies and consumers weakened rapidly and caused economic activity to decrease.

Governments supported businesses and households in the energy crisis

A joint agreement was signed in the European Union in the summer to prevent the worst possible developments by reducing gas consumption, and gas stocks were sufficiently built up during the summer and autumn despite Russian manipulation of the gas supplies and closure of pipelines. Gas from pipelines was partly replaced by liquefied natural gas, and the winter in Europe turned out to be less harsh than feared. On top of this, governments in the euro area gave generous support to companies and households in places to help them cope with high energy costs. Europe ran a trade deficit in 2022 though, as imports of fuels hit record levels. The tight coronavirus restrictions in China caused supply chain disruptions for several euro area production companies and shortages of components and raw materials caused difficulties, but the services sector fared better as people were again able to travel freely and eat out after being restrained for a long time. This was reflected by exceptionally fast growth in the summer in the economies of Mediterranean countries, which are important tourist destinations. Growth in the euro area economy was consequently more resilient than expected and reached 3.5% in 2022.

Inflation was high

Energy prices rose a long way in 2022 and pushed inflation in the euro area ever higher. Inflation was at 6% at the start of the year, but by the autumn it had climbed to a record 10%. The biggest contributions to inflation came from energy, services and food. Lower energy prices towards the end of the year meant that inflation came down to 9%, which partly also reflected the effect of state support. Core inflation remained high though at 5%, indicating that price pressures in the economy remained strong.

The labour market in the euro area was strong

The labour market in the euro area remained in good shape however and the weakness in the economy was not reflected in the labour market. Unemployment fell to a record low for the euro area of 6.7%. The number of people in employment rose, and the labour force participation rate approached its historical peak. Companies were still having problems in finding appropriately qualified labour. The strong labour market together with high inflation started to accelerate the growth in wages, and they are expected to continue rising in 2023.

THE ESTONIAN ECONOMY IN 2022

The highest inflation in over two decades

Inflation in 2022 in Estonia was very high as the cost of the consumer basket rose by 19.4%. Inflation was last that high in 1996. The largest part of the rise in price of the consumer basket came from higher prices for energy, and the inflation rate peaked in August at 24.8%. The price level remained more or less unchanged after August, and the inflation figures for the subsequent months reflected the leap in prices in the first half of the year. Estonia stood out among other countries because in seven of the 12 months the yearly growth in consumer prices in Estonia was the fastest in the euro area, as not only energy prices but also prices of other goods and services rose by more than the average in the euro area.

Reduced purchasing power

Wages continued to rise fast throughout the year and businesses raised wages because inflation was high, but inflation still took a sizeable bite out of people's purchasing power. The purchasing power of the average wage fell by around 9% over the year. The rise in the cost of living hit hardest at people on the lowest incomes, as the goods and services through which higher inflation was expressed make up a larger share of the monthly consumption spending of people on lower incomes.

Consumption started to decline at the end of the year

Consumer confidence fell in the autumn to a lower level than in the financial crisis of 2008-2009 or the later coronavirus crisis. Retail sales volumes increased despite the deeper uncertainty and rapid rise in prices though, and signs of decline only appeared towards the end of the year. Spending increased notably faster than incomes, as consumers started to use the savings they had built up during the pandemic and the money withdrawn from the second pension pillar, most of which had been put to use by the end of the year. Consumption did not decline particularly despite high inflation, which allowed companies to pass higher production costs into end prices, so that corporate profits increased rapidly.

The economy contracted

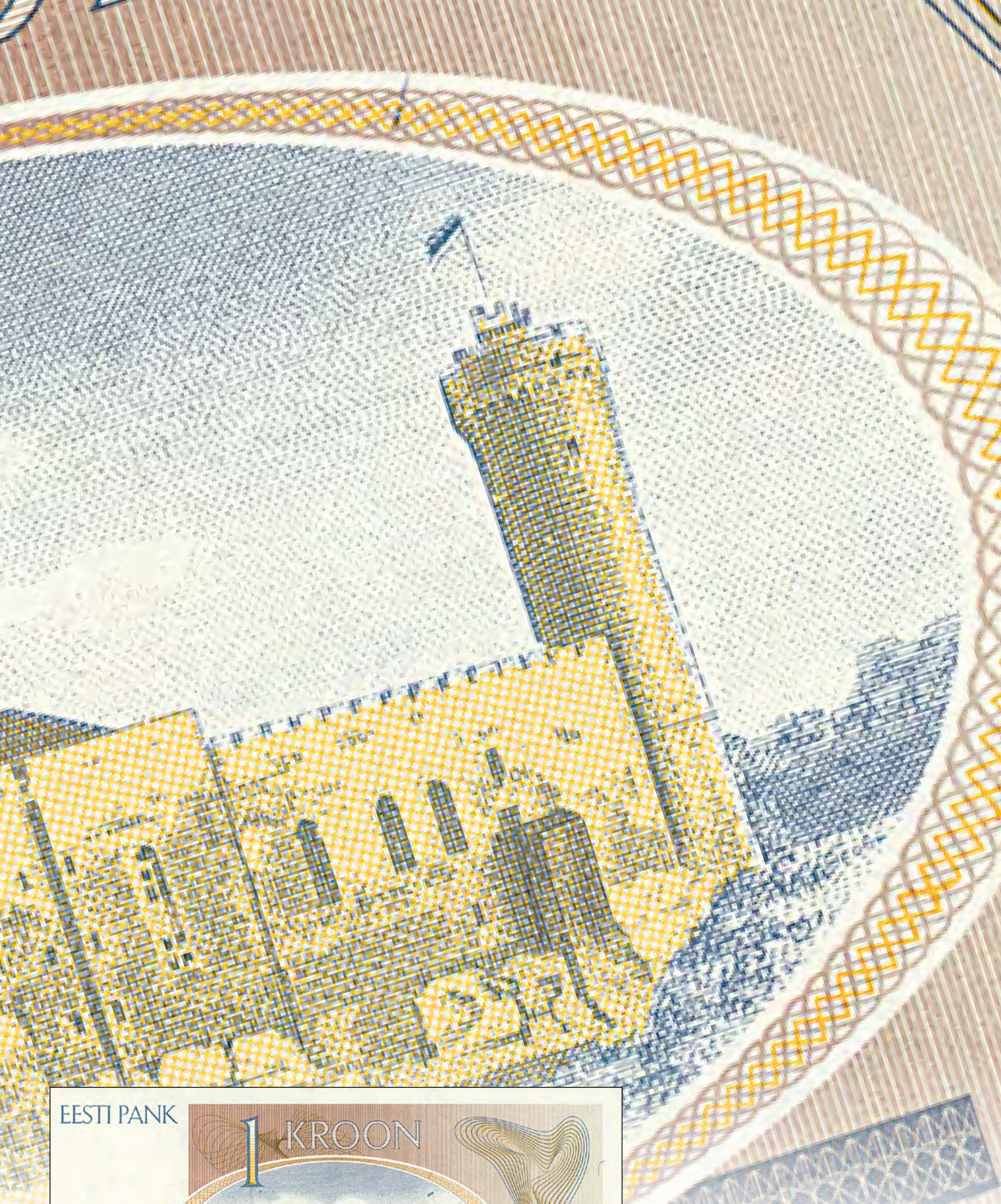
Supply difficulties caused by the sanctions on Russia, higher prices for raw materials, and a fall in purchasing power in Estonia and in foreign markets combined with a decline in investment to drive economic activity to decrease in 2022. Higher interest rates for borrowing started to have an increasing impact as the year progressed, and the economy shrank in size by 1.3% for the year as a whole.

Reduced desire to hire

Setbacks in demand in the domestic and export markets and greater uncertainty about the future than usual started to be expressed in the second half of the year in more modest expectations of companies for employment and a fall in the number of people in employment. Unemployment rose in the later months of the year, though a large part of the newly added unemployed were refugees from the war in Ukraine. The ILO figure for unemployment without the refugees was 5.3% in the fourth quarter. Refugees were also a notable share in employment, as around 40% of the refugees of working age were engaged in the Estonian labour market.

A good year for tax revenues

Higher prices for goods and services and fairly fast growth in wages at the same time meant strong growth in tax revenues for the general government. Larger tax receipts than had been forecast allowed the budget deficit to be cut, though the improvement in the budget was only temporary as the high inflation of 2022 has increased general government costs while growth in revenues is set to slow, and so the budget deficit may be expected to widen again.



ONE KROON

1992

Designed by: Urmas Ploomipuu

The back of the banknote shows Toompea Castle

ACTIVITIES OF EESTI PANK

SETTING AND EXECUTING MONETARY POLICY

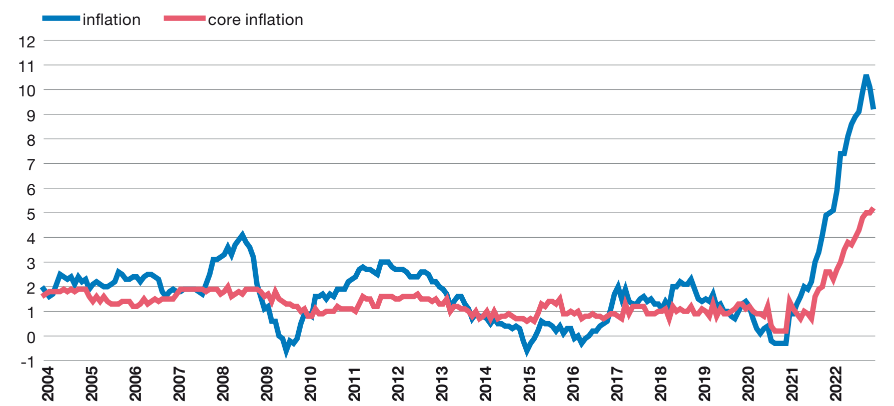
Eesti Pank participates in setting the single monetary policy of the euro area, and the decisions needed to execute the policy are taken jointly by all the central banks of the Eurosystem working together. Those decisions are then carried out by the central bank of each member state. The most important monetary policy goal of the Eurosystem, which is the European Central Bank and the central banks of the members of the euro area, is to keep prices stable in the euro area. Price stability means annual inflation of 2% over the medium term.

MONETARY POLICY DECISIONS

The European Central Bank tightened monetary policy considerably in 2022 in order to tackle very high inflation.

Inflation was at record high levels in the euro area last year. Inflation was boosted at the start of the year by the sharp rise in commodities prices and by supply problems, but during the year price pressures reached all the sectors of the economy. Demand, and consequently inflation, was supported by the reopening of economies after the pandemic and the use of savings built up under the restrictions, and by a fall in unemployment. The average annual rise in consumer prices in the euro area accelerated in 2022 to 8.4% (see Figure 1). The forecast published in December 2022 by experts from the Eurosystem expects inflation in the euro area to remain above its target of 2% for some time yet, and to fall to an average of 2.3% by 2025.

Figure 1. Inflation and core inflation in the euro area



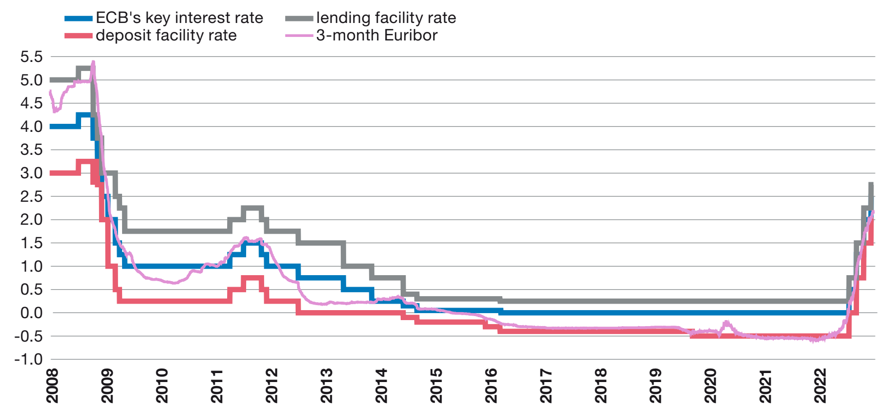
Source: Eurostat

The substantial change in the outlook for inflation last year caused a major change in the direction of monetary policy in order to bring inflation back to the target of the European Central Bank. Preparations to end the accommodative monetary policy started at the end of 2021, though it was thought that this would happen smoothly and over a longer time. Russia's invasion of Ukraine and the consequent additional inflation pressures gave a further impetus to the move to tighten monetary policy. Monetary policy now needs to be tightened at a time when the economy is facing various difficulties. Central banks have no tools that can directly counter the shock caused by interruptions to supply chains and the rise in commodities prices, but they need to act decisively to absorb the secondary impacts of inflation and keep inflation expectations under control. Low interest rates create an environment in which other prices are able to rise further and for longer.

ECB interest rates rose to where they were in 2009

The Governing Council of the European Central Bank started raising monetary policy interest rates in July, and raised them by a total of 2.5 percentage points over four meetings in 2022. The interest rate on main refinancing operations was 2.5% at the end of the year, the marginal lending rate was 2.75%, and the deposit facility rate was 2% (see Figure 2)[1]. The Governing Council stated in December that it is highly probable that interest rates are not yet high enough to restrain economic activity and inflation, and so it is planning to raise them significantly further at its next meetings. It emphasised though that the decisions about interest rates continue to be data-dependent.

Figure 2. Eurosystem key interest rates and money market rates, %



The amount of the bonds that were purchased under the asset purchase programme on the balance sheet of the Eurosystem will be reduced in 2023

Asset purchases started to wind down some time before interest rates started to rise. Net purchases under the pandemic emergency purchase programme (PEPP) were discontinued in March. The net purchases made under the original asset purchase programme (APP) were also reduced from January, but the Governing Council initially planned to continue making additional purchases at least until the end of the year. Net purchases under the APP were discontinued in June however, as the outlook for inflation had changed by that time. Reinvestment of bonds in both the PEPP and APP portfolios continued after the end of net purchases, meaning that the volume of assets purchased under the programmes on the balance sheet of the Eurosystem remained largely unchanged in the second half of the year.

The Governing Council decided at its monetary policy meeting in December that it would start to reduce the size of the asset purchase programme portfolio in 2023. Reinvestment in full of the securities purchased under the APP will be ended in

1 The conditions for the loans issued to banks under the third series of the targeted longer-term refinancing operations (TLTRO-III) were also changed to keep them aligned with the broader process of normalising monetary policy and to strengthen the transmission of the rise in base interest rates into the lending conditions of banks.

February 2023, meaning that from March the Eurosystem will no longer reinvest all of the principal payments from maturing securities. The Governing Council said that the portfolio will decline at a measured and predictable pace, and until the end of the second quarter of 2023 the decline will amount to 15 billion euros per month on average. Whether the rate of decline in the portfolio is appropriate will be assessed regularly. For the PEPP, the Governing Council intends to reinvest the principal payments from maturing securities purchased under the programme until at least the end of 2024.

The TPI was approved as a new monetary policy instrument in July

Financial markets do not always adapt smoothly to tighter monetary policy, especially after interest rates have been low for a long time. The Governing Council has therefore created certain protective mechanisms to ease market tensions if needed. The maturing bonds purchased under the PEPP can for example be reinvested flexibly, which means that more or fewer bonds from one country or one asset class may temporarily be bought in response to market conditions. The monetary policy meeting in July also approved a new instrument to protect the transmission mechanism of monetary policy.

The new measure will help the Governing Council achieve price stability better

The Governing Council approved the Transmission Protection Instrument (TPI) on 21 July 2022, allowing central banks to intervene further in bond markets if there are unwarranted, disorderly dynamics in the market that are not related to country-specific fundamentals and that cause interest rates to rise sharply. This helps ensure that the decisions of the central bank are passed through smoothly across all the economies of the euro area.

Asset purchases under the TPI focus on public sector securities with a remaining maturity of between one and ten years. Like the asset purchase programmes, this instrument will buy sovereign bonds from the secondary market. The amount of purchases will depend on how serious the risks to monetary policy transmission are, and so the purchase volumes are not restricted in advance. Asset purchases under the TPI are short-term purchases that will be ended once monetary policy transmission has improved durably, or when it is considered that the persistent tensions in financing conditions are not unwarranted, meaning they are due to a deterioration in the economic outlook for a state.

Any decision by the Governing Council to activate the TPI will be based on a thorough assessment of market indicators and monetary policy transmission, and will follow the criteria for eligibility. Before activating the TPI, the Governing Council will use several criteria to assess whether states where the Eurosystem plans to make purchases are following credible and sustainable fiscal and macroeconomic policies.

To avoid any misalignment with the appropriate monetary policy stance, the Governing Council will assess the consequences of the TPI purchases for the size of the monetary policy asset portfolio of the Eurosystem and the amount of excess liquidity when activating the TPI. The European Central Bank has stated that purchases under the TPI would be made in such a way that they do not have a lasting impact on the overall balance sheet of the Eurosystem, and so on the monetary policy stance.

IMPLEMENTING MONETARY POLICY IN THE EURO AREA

In the more practical part of monetary policy, the European Central Bank and the central banks of the euro area countries focused primarily in 2022 on applying the measures associated with a tighter monetary policy. Several changes affected asset purchases, the mandatory reserve, and the repayments of longer-term refinancing operations directed at the banks. Table 1 provides a more detailed picture of the monetary policy framework of the euro area and the changes made to it during the year.

Table 1. The Eurosystem's monetary policy framework in 2022

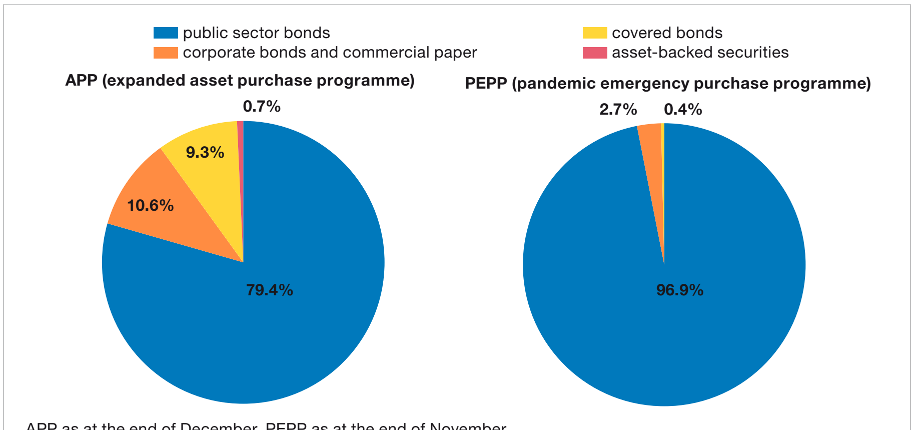
The standard monetary policy framework	Maturity	Frequency	Change in 2022
1. Open market operations			
Main refinancing operations (MRO)	One week	Weekly	The ECB raised the three key interest rates four times during the year: on 21 July by 50 basis points, on 8 September by 75 basis points, on 27 October by 75 basis points, on 15 December by 50 basis points. As at 21.12.2022 the interest rate on main refinancing operations was 2.50%, the marginal lending rate was 2.75%, and the deposit facility rate was 2.00%.
Longer-term refinancing operations (LTRO)	3 months	Once a quarter	
Fine-tuning operations (FTO)	As necessary	As necessary	
Structural operations	As necessary	As necessary	
2. Standing facilities			
Deposit facility (DF)	Overnight	Daily	
Marginal lending facility (MLF)	Overnight	Daily	
3. Minimum reserves			
Minimum reserve requirement (MRR)	Daily	Daily	On 27.10.2022 the Governing Council decided to apply the interest rate on the deposit facility to the mandatory reserve requirement held by credit institutions in the Eurosystem from 21.12.2022, to bring the principles for compensating the reserve requirement more into alignment with the prevailing conditions in the money markets
Main non-standard measures, ongoing operations and crisis measures	**Maturity**	**Frequency**	**Developments in 2022**
Fixed rate tender procedures with full allotment	From October 2008; for as long as needed.	Continuously	
Swap lines with various non-euro area central banks	No specified term	As necessary	The existing swap and repo lines were extended in March 2022
Repo lines with various non-euro area central banks (EUREP), additional crisis measure	25.6.2020–15.1.2024		The Governing Council decided in March to extend the Eurosystem repo facility for central banks (EUREP) until 15.1.2023. On 15.12.2022 it was announced that EUREP and the existing swap lines would be extended to 15.1.2024
The third series of targeted longer-term refinancing operations (TLTRO-II)	September 2019 – December 2021	There were two early repayment operation in 2022, and two operations reached maturity	The Governing Council confirmed in February that it would continue to monitor bank funding conditions and ensure that the maturing of operations under TLTRO-III does not hamper the smooth transmission of its monetary policy. The Governing Council decided in October 2022 to change the interest rates on TLTRO-III operations from 23.11.2022 and give the banks additional dates for voluntary early repayment
Pandemic emergency longer-term refinancing operations (PELTRO)	May 2020 – December 2021	Three operations reached maturity in 2022	Reaching maturity can be taken to mean that the measure ends
Measures to ease eligible collateral temporarily, additional crisis measure	7 April until at least June 2022	Continuously	The Governing Council decided in March to phase out gradually the temporary pandemic collateral easing measures; the measures are to be phased out in three steps, with the first on 8.7.2022

US dollar operations	From 1.7.2020	Weekly	
The expanded asset purchase programme (APP) and reinvestment of APP bonds, which covers the third purchase programme for covered bonds (CBPP3), the asset backed securities purchase programme (ABSPP), the public sector securities purchase programme (PSPP), and the corporate bond purchase programme (CSPP)	From November 2019 for as long as it is necessary to support the impact of base interest rates	Continuously	The Governing Council confirmed in February 2022 the decision taken at the monetary policy meeting in December 2021 to slow the pace of asset purchases gradually. The Governing Council decided in June to end net asset purchases under the APP as of 1 July 2022. The Governing Council announced on 15.12.2022 that it intends to continue reinvesting in full the principal payments from maturing securities purchased under the APP until the end of February 2023; after that it will start to reduce the size of the APP portfolio
The Pandemic emergency purchase programme (PEPP) and reinvestment of PEPP bonds, additional crisis measure	From March 2020 to March 2022; reinvestment until at least the end of 2024	Continuously	The Governing Council confirmed in February 2022 the decision taken at the monetary policy meeting in December 2021 to terminate the net purchases under the PEPP at the end of March 2022. The Governing Council confirmed in June 2022 that it plans to reinvest the principal repaid on securities purchased under the PEPP that reach maturity until at least the end of 2024.
Two-tier system or tiering	From October 2019 to September 2022	Continuously	The Governing Council confirmed in March 2022 that it would assess the appropriate calibration of its two-tier system for reserve remuneration so that the negative interest rate policy would not limit banks' intermediation capacity in an environment of ample excess liquidity. The Governing Council decided in September 2022 to suspend the two-tier system for the remuneration of excess reserves
Transmission protection instrument (TPI)	As planned	When necessary	On 21.7.2022 the Governing Council approved the transmission protection instrument (TPI)

The largest part of the asset purchases were public sector bonds

The Eurosystem balance sheet had a total of 4.9 trillion euros of assets purchased under various purchase programmes as at the end of 2022, of which around 0.2 trillion euros were purchased in 2022. Purchases under the APP increased over the year from 3.1 trillion euros to 3.3 trillion. The assets purchased under the PEPP totalled 1.7 trillion euros at the end of 2022. The distribution of the purchases under the two framework programmes is shown in Figure 3.

Figure 3. Breakdown of the asset purchase portfolio



APP as at the end of December, PEPP as at the end of November
Source: European Central Bank

The largest part of the asset purchases were public sector bonds. The Eurosystem buys public sector bonds only from the secondary market, and it does the same during the reinvestment phase. The Eurosystem makes purchases from both the primary and secondary markets for the private sector asset purchase programmes[2].

2 Private sector securities will no longer be bought from the primary market in 2023, except for corporate green bonds.

To support liquidity in the secondary markets, the Eurosystem lends out bonds purchased under the PSPP (public sector purchase programme), the CSPP (corporate sector purchase programme), the CBPP3 (third covered bond purchase programme) and the PEPP. The lending limit against cash collateral was raised in November 2022. The bonds can be lent out against other bonds or cash as collateral. Market participants have made active use of this option.

Refinancing operations were reduced in size

Voluntary early repayments of targeted longer-term refinancing operations and emergency refinancing operations started in 2022, and some of the operations reached maturity. The Governing Council decided at the end of the year to change the conditions on the third series of targeted longer-term refinancing operations (TLTRO-III) and to offer the banks additional dates for voluntary early repayment. The total volume of the refinancing operations declined by 0.9 trillion euros in 2022 to 1.3 trillion euros. The volume of longer-term refinancing operations shrank by 880 billion euros because of voluntary repayments and maturing operations.

The weekly and three-month refinancing operations in the standard framework have remained marginal in volume and importance.

The collateral easing measures were gradually removed

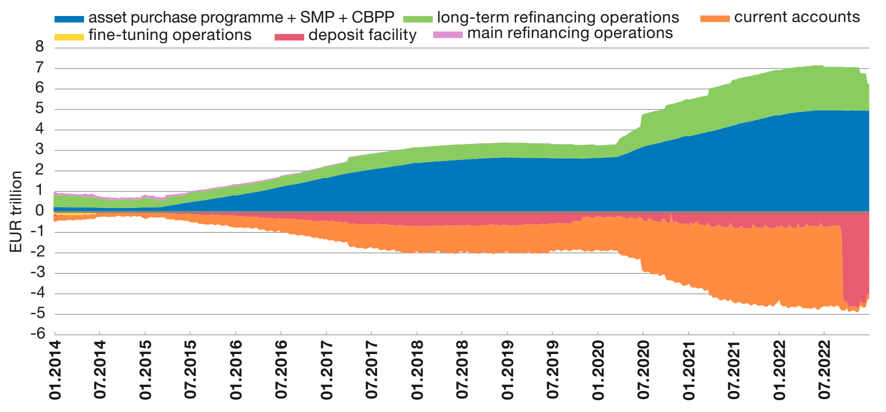
The Governing Council decided in March 2022 to phase out gradually the temporary pandemic collateral easing measures that were introduced in April 2020. The collateral easing measures will be phased out in several steps, with the first taken in July 2022 as the haircut applied to all assets was reduced from 20% to 10%.

Credit institutions made active use of the overnight deposit facility

Excess liquidity in the Eurosystem[3] stood at 4.05 trillion euros at the end of 2022. The banks can hold their liquidity on their current accounts at the central bank, or can use the overnight deposit facility. The rise in the key interest rates made credit institutions more active at using the deposit facility and overnight deposit facility.

Overall the growth in the balance sheet of the Eurosystem slowed in 2022 as a consequence of tighter monetary policy, which included the discontinuation of net asset purchases and the maturing and early repayment of TLTRO-III loans. Figure 4 shows the changes in the volume of the Eurosystem's monetary policy operations.

Figure 4. Changes in the volume of the Eurosystem's monetary policy operations in 2014-2022



Source: European Central Bank

3 Excess liquidity means funds that credit institutions hold at the central banks of the euro area above the mandatory minimum reserve requirements.

IMPLEMENTING MONETARY POLICY AT EESTI PANK

The work of Eesti Pank changed in 2022 in line with the new monetary policy decisions of the Eurosystem. Of primary note was that the stock of loans from monetary policy operations on the Eesti Pank balance sheet dropped in 2022 by 1.7 billion euros to 150 million euros as longer-term refinancing operations were reduced. The value of monetary policy assets on the Eesti Pank balance sheet increased to 10.988 billion euros in 2022 as a result of the asset purchase programmes.

Eesti Pank participated in three Eurosystem asset purchase programmes

Eesti Pank again participated in 2022 in three of the five active asset purchase programmes[4] run by the Eurosystem, making purchases under the third purchase programme for covered bonds (CBPP3), the public sector securities purchase programme (PSPP), and the pandemic emergency purchase programme (PEPP). As net purchases under the APP and the PEPP were ended in 2022, Eesti Pank participated in the refinancing of the programmes.

Eesti Pank purchases and refinances bonds of supranational European institutions under the public sector asset purchase programme in proportion to the capital key[5], and from June 2020 it also purchases Estonian government bonds. The Eesti Pank balance sheet had 6770 million euros of securities bought under the PEPP as at the end of the year, of which 110 million euros were government bonds[6]. The risk of the government bonds is not shared with the Eurosystem and is borne by Eesti Pank alone.

Covered bonds of 348 million euros had been bought under the third covered bond purchase programme as at the end of the year.

Eesti Pank mainly purchased bonds of supranational institutions under the pandemic emergency purchase programme during the year, and to a smaller extent sovereign bonds and covered bonds as well. The Eesti Pank balance sheet had 3869 million euros of securities bought under the PEPP as at the end of the year.

Eesti Pank did not participate in the asset-backed securities purchase programme (ABSPP) or the corporate sector purchase programme (CSPP), but it shares the risks with the other members of the Eurosystem in accordance with the capital key.

Most of the TLTRO-III loans taken by the banks were repaid early in 2022

The local Estonian banks took an active part in 2020 in borrowing from the TLTRO-III operations, but they did not take any more loans in 2021. Voluntary early repayment operations started in 2022 for those operations, as two chances were given to repay them early as the conditions for the operations changed in October 2022.

Most of the TLTRO-III loans taken by Estonian commercial banks were repaid early in 2022. The volume of longer-term refinancing operations on the Eesti Pank balance sheet fell in consequence by 1.7 billion euros to 150 million euros.

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4 The expanded asset purchase programme (APP) covers the third purchase programme for covered bonds (CBPP3), the asset backed securities purchase programme (ABSPP), the public sector securities purchase programme (PSPP), and the corporate bond purchase programme (CSPP), which was added in 2016. The Pandemic Emergency Purchase Programme (PEPP) is also active.

5 The capital key sets the size of the participation of the national central banks in the capital of the European Central Bank. It is calculated from the weighted share of the GDP and population of each country in the euro area every five years. Eesti Pank's share was 0.2817% in 2022; from 1 January 2023 it is 0.2794%.

6 Eesti Pank's purchases under the public sector asset purchase programme of the euro area central banks.

The Governing Council of the European Central Bank changed the remuneration of the mandatory reserve

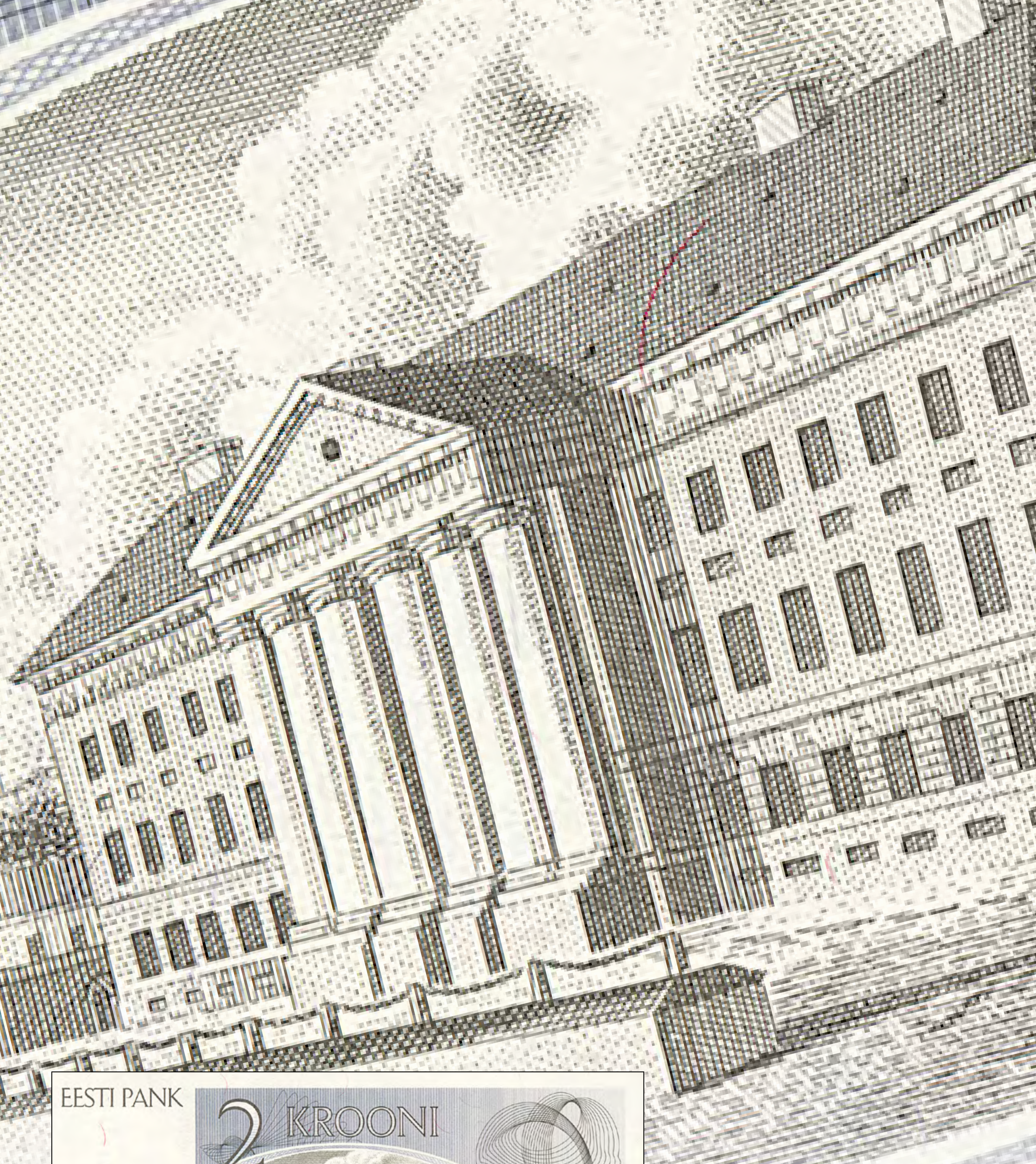
The monetary policy measures of the euro area also include the standing facilities, which are the daily facility for overnight borrowing or for depositing excess funds at the central bank. As interest rates rose several times, the Estonian commercial banks started to use the overnight deposit facility again.

All the commercial banks must on top of this hold a mandatory reserve that was subject until December 2022 to the interest rate on main refinancing operations, which has been 0% in recent years. The Governing Council of the European Central Bank decided in October to change the remuneration of the mandatory reserve. The mandatory reserve held by credit institutions in the Eurosystem is remunerated not at the interest rate on main refinancing operations that was used earlier, but from 21 December at the interest rate on the deposit facility, which was 2% at the end of the year.

The two-tier system that was introduced at the end of 2019 and that applies the interest rate of 0% to excess liquidity held at the central bank on amounts up to six times the mandatory reserve was also ended in September 2022.

Credit institutions held 6942 million euros of overnight deposits at the central bank at the end of 2022 and 487 million euros on current accounts, of which the mandatory reserve was around 279 million euros.

The European Central Bank announced in July 2022 that it would take additional steps to account for climate change in its activities. As part of this, the Eurosystem is attempting to reduce gradually the CO_2 footprint of the corporate sector bonds in its portfolio. This is done by preferring bond issuers with better climate indicators, and investing a substantial part of the sums that are expected to be released by corporate bonds maturing in the coming years in bonds from such issuers. The European Central Bank will start to publish information on the climate impact of the corporate sector bond portfolio from the first quarter of 2023.



TWO KROONS
1992; 2006/2007
Designed by: Urmas Ploomipuu
The back of the banknote shows the main building of the University of Tartu

ENSURING FINANCIAL STABILITY

THE RISKS TO FINANCIAL STABILITY

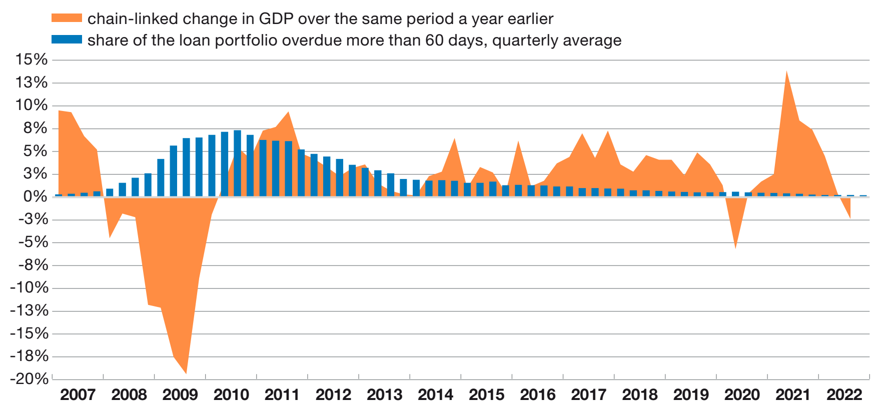
It is the task of Eesti Pank to help the financial system function stably. The central bank does this by assessing the risks to the stability of the financial system and taking the measures that are needed to minimise those risks. Estonian financial stability was impacted most in 2022 by Russia's invasion of Ukraine. The Estonian economy had been growing fast at the start of the year as it recovered from the Covid-19 pandemic, and the financial position of companies and households was considered to be generally good. Rapid growth in lending indicated that companies and households had good access to credit in 2022, and this has been supported in the past couple of years by tighter competition in the banking market.

Companies and households being less able to service their loans became the main risk

The financial position of companies and households in Estonia was already under pressure in the second half of 2021 because of high inflation. Central banks, including the European Central Bank, started to tighten monetary policy sharply and raise interest rates in order to get inflation under control. A large part of the loans taken by Estonian businesses and households have a floating interest rate based on a reference rate that is usually Euribor, the European interbank money market rate, and so tighter monetary policy caused loan servicing costs to rise steeply for companies and families.

Consumption remained strong until autumn 2022 despite high inflation and companies even managed to increase their profits, but reduced purchasing power started to rein consumption in at the end of the year. Falling demand, high inflation and increasing loan servicing costs could eat into the profits of companies. The ability of households to service their loans is reduced by rapidly rising prices and larger interest payments, but the biggest factor is the increased risk of losing a job and losing income. This means the danger has increased of businesses and households falling into difficulties and having problems repaying their loans.

Figure 5. Change in GDP and the level of overdue loans at the banks



Sources: Eesti Pank, Statistics Estonia

Companies managed, however, to recover profitability after the pandemic and had built up financial buffers in recent years, which alleviates the more challenging circumstances they face. Households are supported by the labour market remaining strong and unemployment low. Overdue loans in the banking sector remained at a very low level at the end of 2022, as only 0.2% of the loan portfolio was overdue by more than 60 days at the end of December (see Figure 5). The capacity of the banks to cope with loan losses is supported by the increased profits from higher interest rates and their sufficiently large capital buffers.

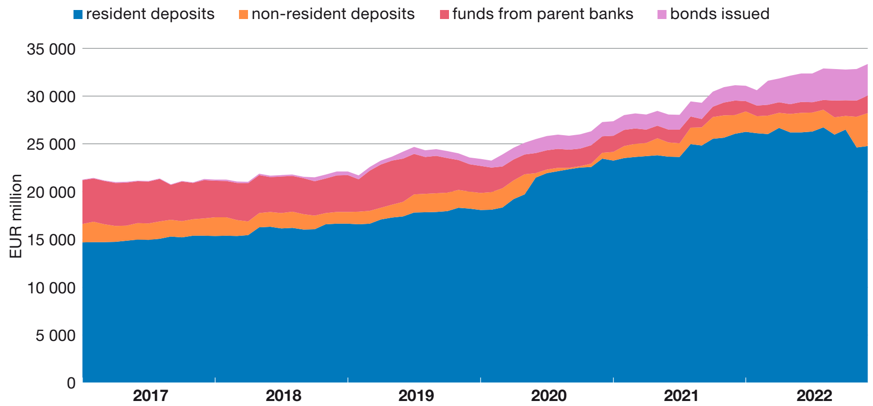
The risk from rapid credit growth and increased debt remained in the background

The debt liabilities of companies and households grew rapidly in 2022 despite the increase in uncertainty caused by the war in Ukraine, and the loan portfolio of the banks grew by 11% over the year. The market for credit was supported by a very active real estate market, and so very fast growth was seen in housing loans and in the debt liabilities taken on by companies to fund real estate. Strong demand has caused prices in the housing market to rise much faster than household incomes in recent years, increasing the risk of a correction in prices. Declining economic activity meant that a fall in demand for credit and activity in the real estate market could be observed at the end of the year, but debt will still grow faster in the coming years than the economy as a whole.

The funding risk of the banks increased as tensions emerged in financial markets

The supply of credit has been supported in recent years by rapid growth in deposits, but funding from bonds has increased in importance (see Figure 6). Growth in deposits became notably slower in 2022 as inflation made spending more expensive for consumers. At the same time, funding from bonds became more difficult and expensive for the banks, as inflation and a worse outlook for the economy made investors in international capital markets more risk averse, and led them to demand higher premiums for taking on risk. The price of funding for issuers from Estonia has also been raised by proximity to a war zone.

Figure 6. Structure of the liabilities of the banking sector



Source: Eesti Pank

The ability of companies and households to service their loans is also deteriorating in neighbouring countries

How the other Baltic states and Sweden perform is particularly important for the functioning of the Estonian banking sector. Two of the largest banks in Estonia are owned by big Swedish banks, and so they are affected by what happens in the home countries of the banking groups and the other markets where they operate. Estonian banks also operate in other markets, mostly Latvia and Lithuania, and so they are affected by the economic performance in those countries. Like in Estonia and elsewhere in Europe, companies and households in Latvia, Lithuania and Sweden are facing high inflation and deteriorating economic circumstances, which threaten the capacity to pay and could cause loan losses to increase.

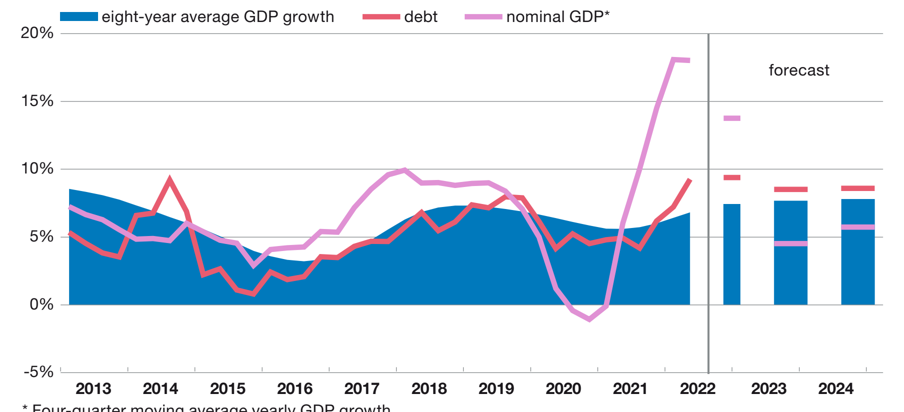
The situation is made more complicated in Sweden by the very high levels of household debt there in international comparison, as rising interest rates have meant sharply higher loan servicing costs and a greater threat to solvency. Rising real estate prices have also been causing concern in Sweden for some years, though they started to fall in 2022.

MACROPRUDENTIAL POLICY

The countercyclical capital buffer requirement was raised to increase the resilience of the banks

Growth in the debt liabilities of companies and households was already faster than long-term nominal economic growth in the fourth quarter of 2021, and Eesti Pank forecast that growth in debt volumes will be faster than nominal GDP growth for 2023-2024 (see Figure 7). Companies and households will consequently have to cope with high levels of indebtedness in the future. If the macroeconomic circumstances should deteriorate sharply, there could be problems in repaying loans that could be made worse by the earlier rapid growth in borrowing. Eesti Pank consequently considered it necessary to raise the countercyclical capital buffer requirement to ensure that banks have large capital reserves to cover the accumulated risks.

Figure 7. Yearly growth in the debt of the non-financial sector and nominal GDP



* Four-quarter moving average yearly GDP growth
Sources: Eesti Pank, Statistics Estonia

The Estonian countercyclical capital buffer rate has two parts, which are the base requirement, which is normally positive under ordinary economic circumstances, and the cyclical requirement that is added on top. The base requirement of 1% has applied from 7 December 2022. Markedly faster growth in credit in 2022 meant that the cyclical risks to financial stability in Estonia increased, and so Eesti Pank considered it necessary to raise the cyclical requirement of the countercyclical capital buffer rate to 0.5%, which will apply from 1 December 2023. This means that from December 2023, banks will have to hold a countercyclical capital buffer at the level of 1.5%.

The good capitalisation of the Estonian banking sector and the profitability that supports it gave Eesti Pank confidence that raising the countercyclical capital buffer will not have any substantial negative impact on the financing of the economy. The new requirement will come in one year after it was announced, giving the banks sufficient time to accumulate the necessary capital. At the time when the buffer requirement was raised, Eesti Pank was well aware of the large degree of uncertainty about how the Estonian economy and credit market would develop in the year ahead, and so if the Estonian economy were to deteriorate so far that there was a sharp increase in loan losses or serious stresses in financing and slower growth in lending, the decision to raise the buffer requirement could be reversed.

A higher systemically important institution capital buffer for LHV Pank

Eesti Pank assesses each year from the market share of the banks which of them are systemically important for the Estonian financial system, and it applies an additional buffer requirement to those that are. The assessment from the data for the end of 2021 led Eesti Pank to define four credit institutions as systemically important in 2022, these being Swedbank, SEB Pank, Luminor and LHV Pank. As the market share of LHV Pank had grown substantially since the previous assessment, Eesti Pank decided to raise the additional buffer rate for that bank from 1.5% to 2% from 1 January 2023. The other large banks remained subject to the earlier 2% requirement.

Separately, the European Central Bank decided to move LHV Group under its direct supervision from 1 January 2023. The decision was taken because the rapid growth at LHV Pank meant that the size of the bank and its assets as a share of Estonian GDP exceeded the threshold of the criterion for economic importance set in the SSM Regulation.

The systemic risk buffer for housing loans issued in Lithuania

The Lithuanian central bank applied a 2% systemic risk buffer for Lithuanian housing loans to banks in Lithuania from 1 July 2022 in order to increase their resilience against the risks from rapidly rising real estate prices and growth in lending volumes. Eesti Pank decided to reciprocate the Lithuanian measure and apply an equivalent capital buffer requirement that all the banks authorised in Estonia have to meet if they have issued housing loans to private individuals in Lithuania through a branch or directly cross-border. The requirement came into force on 1 July 2022 at the same time as the measure of the Lithuanian central bank.

The Lithuanian systemic risk buffer is the first macroprudential measure applied in another country that Eesti Pank has decided to reciprocate. As the branches of some Estonian banks have large credit positions in Lithuania and constitute a significant part of the banking sector in that country, the requirements needed to be applied in Estonia as well to reduce risks in the Estonian banking sector and to ensure the effectiveness of the Lithuanian measure.

Housing loan requirements have helped dissuade excessively risky lending

Given the rapid rise in real estate prices and growth in housing loans, Eesti Pank assessed in 2022 whether the restrictions on the banks on issuing housing loans that were established in March 2015 were still sufficient. The central bank's main conclusion from the analysis was that the housing loan requirements have successfully achieved their goal as a structural measure in framing the lending conditions of the banks, and have helped prevent excessively risky lending. As clear signs of the rate of growth in housing loans slowing became apparent in autumn 2022 as the economic climate deteriorated, Eesti Pank did not consider it necessary to tighten the requirements.

Rising base interest rates are illustrating the importance of the related condition of the DSTI requirement that the calculation of the DSTI ratio must consider whichever is higher of an interest rate of 6% or the interest rate plus 2 percentage points (see Table 2).

Table 2. Macroprudential measures applied by Eesti Pank as at 31.12.2022

Tool		Requirement	Main changes in 2022
Countercyclical capital buffer		1%	1.5% from 1.12.2023
Other systemically important institutions buffer	Swedbank AS	2%	
	AS SEB Pank	2%	
	Luminor Bank AS	2%	
	AS LHV Pank	1.5%	2% from 1.1.2023
Risk weight floor for mortgage loans*		15%	
Requirements for issuing housing loans**	loan-to-value (LTV)	85%***	
	debt service-to-income (DSTI)	50%****	
	maximum maturity	30 years	

* The floor applies to banks that use the internal ratings based (IRB) approach for the average risk weight of their mortgage loan portfolios.
** The limits may be breached by 15% of the volume of mortgages issued each quarter.
*** The limit is 90% for loans guaranteed by KredEx.
**** The interest rate used in the calculation is 6% or the actual interest rate plus two percentage points, whichever is higher.

European Union supervisory institutions should assess measures taken to increase the resilience of the financial sector

The focus of the European Systemic Risk Board (ESRB) in 2022 was on the increased risks threatening financial stability in the European Union, and the marked deterioration in the outlook for global economic growth that resulted from the sharp rise in prices, ongoing blockages in supply chains, and Russia's invasion of Ukraine. Higher inflation in 2022 caused interest rates to rise sharply, putting pressure on the ability of companies and households to service their loans and potentially causing the loan losses of the banks to increase. The prices of financial assets fell substantially in 2022, but the European Central Bank and the ESRB consider that if the expectations of market participants for economic growth, inflation or monetary policy should change suddenly, those prices could fall even further. The ESRB issued a warning about this in September. Although earlier steps have helped support resilience in the European Union financial sector, the ESRB recommended that member states consider maintaining, or if necessary strengthening, all their micro and macroprudential measures to preserve and enhance resilience in the financial sector.

The ESRB considers that an additional risk is the lack of liquidity in some money market funds, as a rapid sale of their assets could make the problems in the capital markets even worse. Heightened geopolitical tensions have also made it more likely that critically important parts of the financial system may be hit by cyber attacks.

The European Union focused greater attention on the risks of commercial real estate

Given the deterioration in the economic climate and in financing conditions, the ESRB assessed the risks to commercial real estate thoroughly and found that they could have a wide-ranging impact on financial stability if they were to be realised. It consequently issued a recommendation for the supervisory institutions of all the member states. The recommendation calls for regular monitoring of risks and developments in commercial real estate and the application of additional supervisory measures if needed to keep the lending practices of financial institutions in line with the risks identified, and to ensure their resilience is sufficient.

Single banking supervision in Europe is closely monitoring climate risks

The European Central Bank carried out a climate risk stress test of the important banks that come under the Single Supervisory Mechanism (SSM) and assessed the readiness of those banks to manage climate risks.

The stress test by the European Central Bank assessed the capacity of the banks to evaluate their climate risks, the impact of highly carbon-intensive economic sectors on their activities, and how different climate risk scenarios would affect the banks. The results showed that around two thirds of the revenues of SSM banks from corporate clients in the non-financial sector come from carbon-intensive industries and that it is often individual large clients that affect this. The impact of the risk scenario depends largely though on the geographical regions and economic sectors that the particular bank operates in.

FINANCIAL SECTOR POLICY

Work to achieve and map the climate goals for the financial sector continued in the European Union

The European Commission is continuing to develop its Sustainable Finance Action Plan initiative. There are three key elements to the sustainable financing framework for the European Union, which are a taxonomy classifying sustainable activities, a disclosure framework for non-financial and financial companies, and investment tools including comparison bases, standards and labels.

The European Commission established screening criteria for the other four environmental objectives of the taxonomy regulation, which are water, the circular economy, pollution prevention, and biodiversity. It also clarified the format for financial market participants and advisers to submit information. To facilitate sustainable investment, the commission produced a set of labels for bonds. The goal of the green bond standard is to improve efficiency, transparency and credibility in the bond market, and so to increase the financing available to green and sustainable projects.

The prudential requirements framework for banks is being updated

The Council of the European Union reached a general approach in its discussion on the amendments to the capital requirements regulation and directive (CRR/CRD) for banks. Starting from the introduction of the Basel III risk-weighted assets floor, it was agreed that the floor would become applicable for each credit institution or at least at the highest level of consolidation in each member state. The file under discussion also includes adjustments to credit, market and operational risks among others. Some principles for how to assess the risks from residential and commercial real estate are also being adjusted.

The cooperation agreement between the Baltic and Nordic central banks was revised

The Nordic and Baltic central banks signed a cooperation agreement in 2016 to help ensure financial stability across the region and to supply emergency liquidity. The agreement is designed to confirm the readiness of the Nordic and Baltic central banks to work together for financial stability, as the banking markets of the countries are so tightly connected. The parties to the agreement are the central banks of Estonia, Latvia, Lithuania, Finland, Sweden, Denmark, Norway and Iceland.

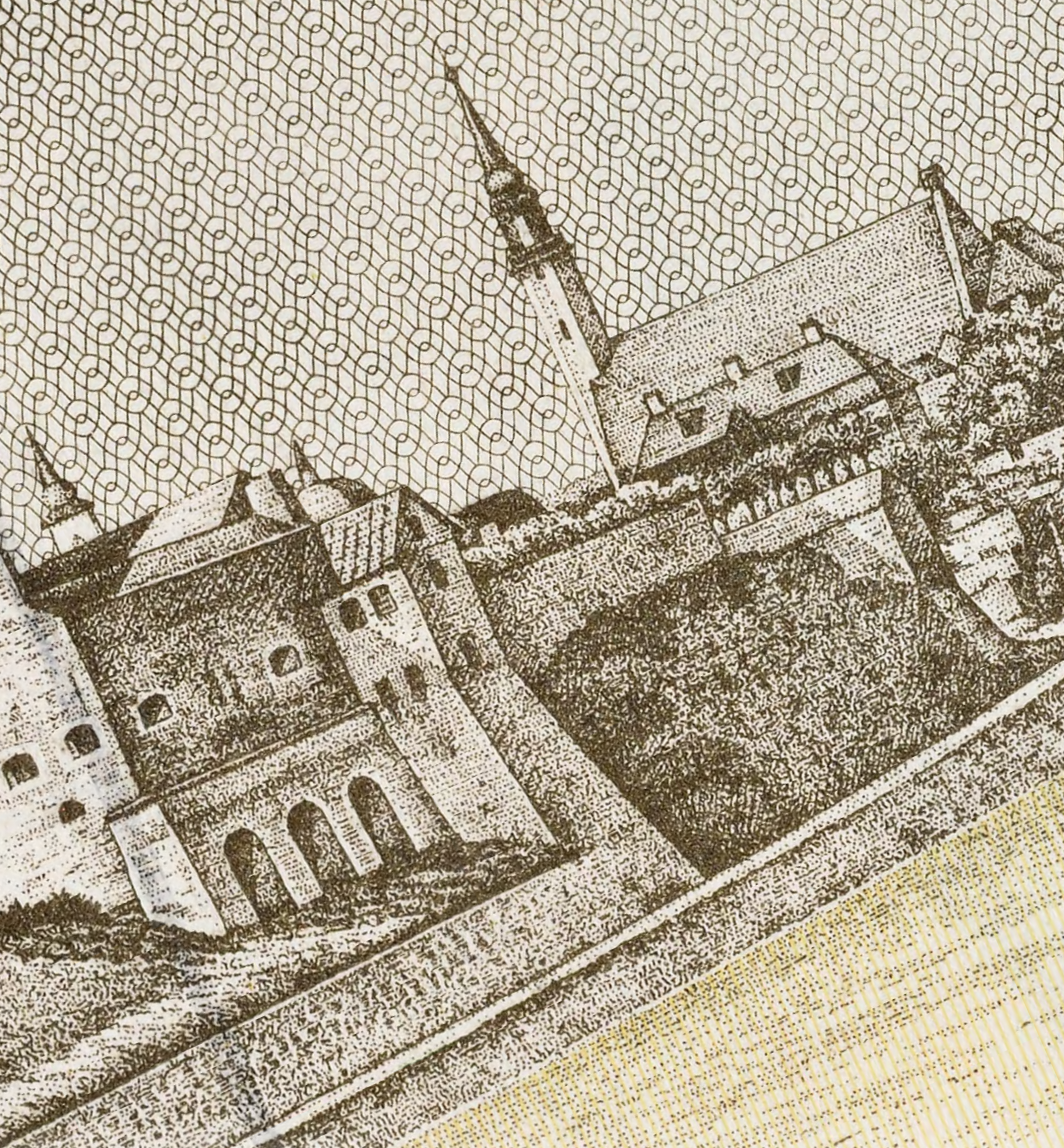
The agreement sets out the principles for cooperation and for sharing information, and the grounds for supplying emergency liquidity to a bank. The agreement was revised in 2022 to keep it up to date, as a result of which, data sharing was clarified and it was agreed to review the agreement in future every five years.

Requirements for virtual currency service providers in Estonia are becoming stricter

One weak point in the fight against money laundering has been the insufficiency of the regulation of virtual currency services. To tackle this, the Ministry of Finance produced amendments to the Money Laundering and Terrorist Financing Prevention Act. This primarily meant extending the application procedures at the Financial Intelligence Unit for providers of virtual currency services and an increase in the capital requirements that they are subject to. Eesti Pank recommended they should be subject to similar minimum initial capital requirements to investment firms, which are required to hold 750,000 euros. This solution is needed because virtual currencies are mainly offered to consumers as an investment product. Eesti Pank also favoured setting a supervision fee for virtual currency service providers at a level that would cover the costs of supervising them.

Compensating the costs of housing loans from subsistence benefit could increase the risks to financial stability

The draft of the Family Benefits Act allowed repayments of housing loans to be covered by subsistence benefit. Unfortunately however, the drafting process did not consider the possible resulting risks to the real estate market and to housing loans, and so more broadly to financial stability. Eesti Pank highlighted the problem that compensation of this kind could lead to irresponsible borrowing. To reduce the potential risks, the central bank recommended not compensating the principal of housing loans but only the interest payments on them; not granting the compensation each year but only once for the duration of the loan; and not linking the subsistence benefit with the decision of the bank that issued the housing loan to refuse a payment holiday for it.



FIVE KROONS
1991/1992; 1994
Designed by: Vladimir Taiger
The back of the banknote shows the Narva river with the Hermann and Ivangorod fortresses

CASH CIRCULATION AND HANDLING

CASH CIRCULATION

Eesti Pank is responsible for ensuring there is enough good quality cash to meet the demand for it. Together with the European Central Bank and the other central banks of the euro area, Eesti Pank issues the notes and coins of the legal tender of the euro area and takes responsibility for ensuring that the demand for euro banknotes and coins is satisfied.

The war in Ukraine increased the demand for cash

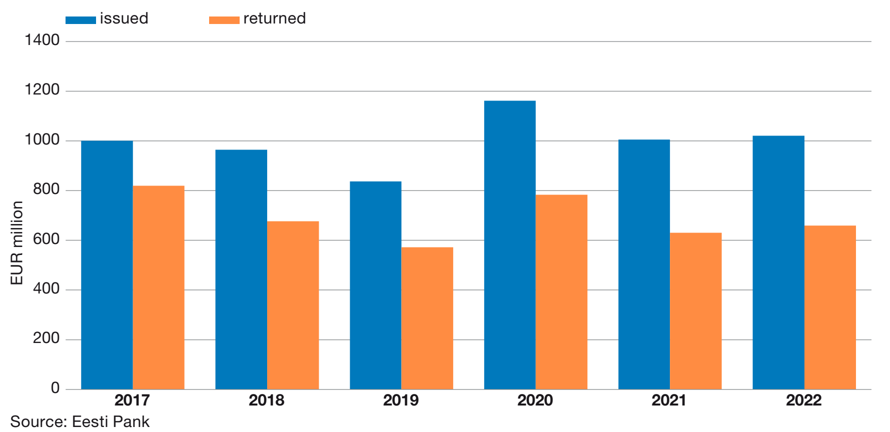
Eesti Pank issued 28.5 million banknotes in 2022 for a total value of 1.02 billion euros (see Figure 8). The peak for issuing banknotes came in March, when 5.2 million notes were issued with a total value of 197.7 million euros. Since joining the euro area, Eesti Pank has on average issued 2.7 million banknotes a month with a value of 97 million euros. The demand for cash in March reached its highest level since Estonia joined the euro area in 2011. The cause of the short-term spike was Russia's invasion of Ukraine.

The banknote issued most commonly in 2022 was the 50-euro note, which accounted for 55% of all the banknotes. Demand is high for the 50-euro note because it is the most widely used in ATMs and it is used both for making payments and for saving. Slightly fewer banknotes were issued than in 2021.

The number of banknotes returned remained the same

There were 17.6 million banknotes returned to Eesti Pank in 2022 with a total value of 659.5 million euros (see Figure 8). The peak month for returns of banknotes was August, when 2.1 million banknotes with a total value of 102.1 million euros were brought to Eesti Pank. Since Estonia joined the euro area, 2.2 million banknotes a month on average have been returned to Eesti Pank with a value of 75.8 million euros. The banknote returned most commonly was the 50-euro note, of which 5.9 million were brought to Eesti Pank. The number of banknotes returned was more or less the same as in 2021.

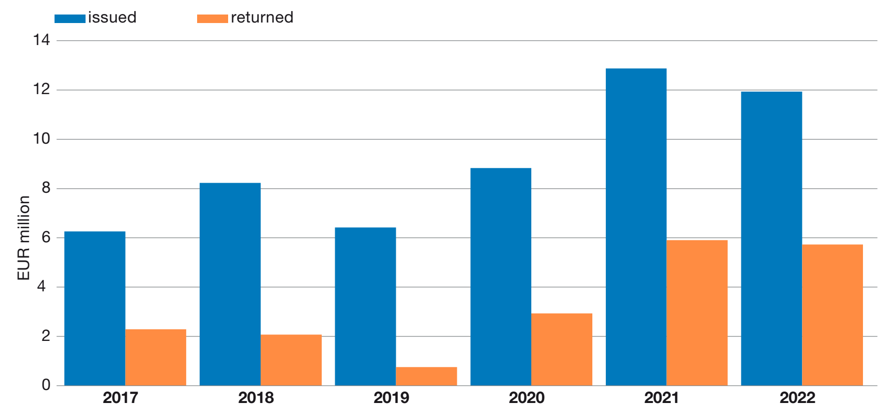
Figure 8. Banknotes issued and returned 2017–2022



Source: Eesti Pank

Eesti Pank issued 30.2 million coins in 2022 with a total value of 11.9 billion euros (see Figure 9). The coins issued most were one and two-cent coins, which made up 44% of all the coins issued. The month with the strongest demand was July, when 3.8 million coins were issued with a total value of 1.46 million euros. Eesti Pank has issued an average of around 3 million coins a month since joining the euro area. Demand for coins was about the same as it was in 2021.

Figure 9. Coins issued and returned 2017–2022



Source: Eesti Pank

There were 8.3 million coins returned to Eesti Pank in 2022 with a total value of 5.5 million euros (see Figure 9). The peak month for returns of coins was January, when 1.8 million coins with a total value of 0.7 million euros were brought back. The coin returned most commonly was the 20-cent coin, of which 2 million were brought to Eesti Pank.

Cash remains the most popular means of payment in Estonia

The SPACE II[7] survey of payment behaviour run in the euro area countries in 2022 found that cash remains the most common means of payment in Estonia. Cash and card payments are used about equally for transactions in points of sale at 46% of purchases each. Cash is used for a larger share of payments between people, at 50% of such transactions. Cash is preferred most by people aged 55 and over. The ability to pay in cash was considered very important or important by 47% of respondents to the survey, which is 13% less than the euro area average of 60%.

Cash can also be withdrawn in Estonia from ATMs, bank offices and shop tills, which creates a wide network of provision for the cash needed for everyday transactions in rural areas in particular. The survey ordered by Eesti Pank found that around 90% of people in Estonia live within five kilometres of a place where they can withdraw cash. Cash is most commonly withdrawn from ATMs. There were 667 ATMs in Estonia in 2022, of which 250 also accept cash depositing. There were 25 bank offices in Estonia that could handle cash deposits and withdrawals in 2022, and 684 locations across Estonia where cash could be withdrawn from shop tills.

The SPACE II survey of payment behaviour found that Estonia is one of the leading countries in the euro area for households keeping a store of cash, as 49% of residents have a stash of cash at home, which is a smaller share only than the 58% in Slovakia.

7 https://www.ecb.europa.eu/stats/ecb_surveys/safe/html/index.en.html

CONTINGENCY OF CASH CIRCULATION

Cash circulation is a vital service in Estonia that must function for society even in an emergency. The operation of cash circulation is coordinated by Eesti Pank, which is also the institution that organises the vital service. Credit institutions are the providers of the vital service, and so they have to make sure that the service operates.

Eesti Pank ensures the continuity of cash circulation in several ways. The most important tasks are to store the cash reserves and issue cash to credit institutions and receive cash from them to meet demand.

As the organiser of a vital service, Eesti Pank reviews and approves the risk analysis and business continuity plans for the cash circulation services of the credit institutions that are providers of vital services. Eesti Pank holds tests and exercises each year to assess the continuity of cash circulation.

Regular tests give useful experience for how to act in an emergency

There were four credit institutions in Estonia in 2022, which were Swedbank, SEB Pank, Luminor Bank and LHV Pank, that were providers of vital services for cash circulation under the Emergency Act and by decree of the Governor of Eesti Pank. The credit institutions are accompanied in the chain of cash circulation by other parties from which they buy different cash-related services, and the crisis preparedness of those parties is also very important for the operation of cash circulation in a crisis. The main job of cash handlers is to sort cash, and there are currently two larger cash handling companies in Estonia. Alongside the cash handlers are also cash transporters that work as security companies to organise the transport of cash, and there were three main cash transporting companies operating in Estonia in 2022.

Eesti Pank ran two business continuity tests for cash in 2022 that practised the organisation of work and various other tasks during an emergency. Both tests were successful and the participants gained very useful experience and skills from them. The central bank will consider the proposals made during the tests for improving the continuity of the organisation.

Eesti Pank also contributed in 2022 to developing the legal framework for the continuity of cash circulation.

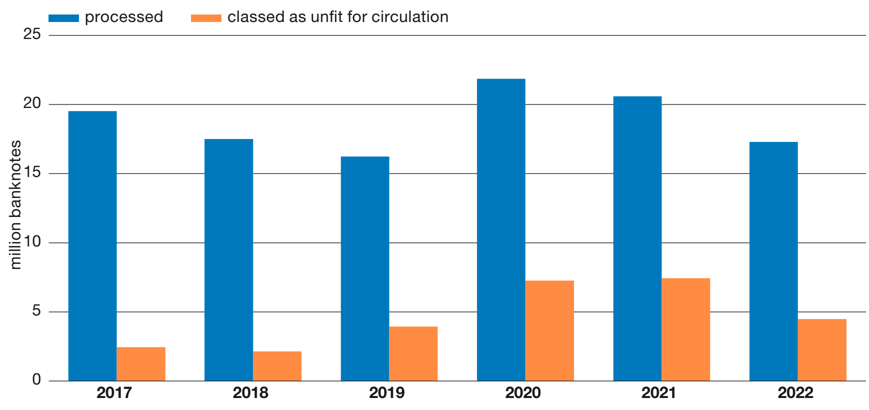
CASH HANDLING

There were 17.3 million banknotes processed in 2022, which was fewer than in the previous year

Eesti Pank issues cash and receives returned cash, and also ensures the quality of the cash in circulation. It does this by sorting all the banknotes returned to Eesti Pank with specialised sorting machines. Banknotes that are torn, worn or stained are removed from circulation by the machines. Banknotes that the machines classify as suitable for circulation are packaged and returned into circulation.

There were 17.3 million banknotes processed in 2022, which was 3.2 million fewer than in 2021 (see Figure 10). Of these, 4.4 million were classed as unsuitable for circulation. The banknote processed most commonly was the 50-euro note, of which 5.87 million were handled, and the 20-euro note, of which 3.76 million were. A total of 319 million banknotes have been processed since Estonia joined the euro area, with a yearly average of 26.6 million.

Figure 10. Banknote production 2017-2022



Source: Eesti Pank

COUNTERFEITS

The number of counterfeits in Estonia and throughout the euro area has fallen from year to year

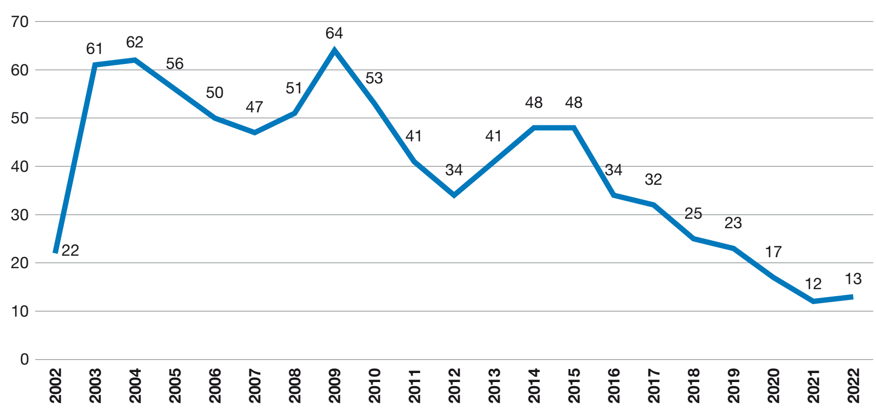
The number of counterfeits in Estonia and in the euro area overall has been low in recent years. There was a small statistical rise in the number of counterfeits in 2022, though the main reason for that was the low reference base of the previous year.

There were 462 counterfeit banknotes identified in Estonia in 2022, which was 199 more than in 2021. Three individual cases in which unusually large amounts of counterfeit banknotes were discovered affected the total number of counterfeits. Of particular note is that Estonia is among the countries in the euro area with the smallest occurrence of counterfeits.

The most common counterfeits in Estonia last year were 20-euro notes, of which 271 were found or 59% of all the counterfeits. The 50-euro notes were followed by the 500-euro notes, of which 82 counterfeits were found last year. There were 45 counterfeit 10-euro notes, and 44 20-euro notes.

There were 13 counterfeits circulating for every million banknotes in 2022

Figure 11. Counterfeits identified each year per million authentic euro banknotes



Source: European Central Bank

Some 376,000 counterfeit banknotes were identified in Europe and removed from circulation in 2022. Counterfeits make up a very small share of the total number of banknotes in circulation, as there were 13 counterfeit notes found for every million authentic banknotes in circulation, which is the second smallest figure since the euro banknotes were introduced into circulation (see Figure 11).

The most commonly counterfeited banknotes were again the 20-euro and 50-euro notes, and a little below two thirds of all the counterfeit banknotes were in these denominations. Some 96.6% of the counterfeits were found in countries of the euro area, while 2.7% were found in European Union member states that are not in the euro area, and 0.7% were found elsewhere in the world.

The equipment used in cash processing is constantly being improved and developed, and this helps in identifying counterfeits. Equally though, anybody can easily check the authenticity of a banknote for themselves by looking at, feeling and tilting it. The websites of the European Central Bank and the central banks of the euro area countries explain how to check authenticity. Counterfeits that are identified are removed from circulation immediately.

There are banknotes of both the first and second series in circulation. Euro banknotes of the second series are even more secure, and this helps to maintain the credibility of the single currency.

PRODUCTION OF BANKNOTES AND COINS

The Governing Council of the European Central Bank decides on the number of banknotes that will be produced each year. From this it is decided how much of the total amount of banknotes to be produced each central bank of the euro area will be responsible for. Eesti Pank has come together with eight other central banks of the euro area in a joint procurement for banknotes that makes the notes for the production obligation of Eesti Pank.

Eesti Pank was responsible for producing 16.64 million 50-euro banknotes in 2022. The banknotes were printed in Germany by the Bundesdruckerei printing house and were added to the joint reserves of the Eurosystem. The production obligation for 2023 is for 8.4 million 50-euro notes, which will be produced by the Oberthur Technologies printing house.

Stocks of circulating euro coins were also increased in 2022 and Eesti Pank received 10 million two-cent coins, 5.6 million five-cent coins, 4.2 million 10-cent coins, 4.9 million 20-cent coins, and 4 million two-euro circulation coins. The coins were minted by the Portuguese mint, which won an international public procurement.

COLLECTOR COINS AND COMMEMORATIVE COINS

Eesti Pank issued two silver collector coins in 2022, one for the Olympic Games in Beijing, and one for Johannes Pitka, and one gold coin for the Livonian Diet. Three commemorative coins were issued alongside the collector coins and were dedicated to the Eramus+ programme, the Society of Estonian Literati, and, because of the extraordinary circumstances, to Ukraine and Freedom. A coin folder was also put together to mark the centenary of the Estonian Border Guard, and it contained one of each of the eight circulating coins minted in 2022.

Three collector coins were issued

A 10-euro silver coin dedicated to the Olympic Games in Beijing and designed by Liis Dvorjanski was issued in January. The design for the coin was inspired by conifers alongside ski trails and represents the landscape of the Olympic venue. The logo of the Estonian Olympic Committee is in the background of the landscape and the view is encircled by the Olympic rings. The coin was minted in the Lithuanian Mint and 3000 were minted.

A 15-euro silver collector coin dedicated to the 150th anniversary of the birth of Johan Pitka was issued in February. The coin was designed by Tiiu Pirsko and Mati Veermets. Pitka was a sea-going captain and Rear Admiral, and he founded the Defence League, the Border Guard and the Estonian Navy. The coin shows a portrait of Johan Pitka, the years 1872–1944 that he lived, and a fragment of a blue, black and white flag. The coin was minted in the Lithuanian Mint and 3000 were minted.

A 25-euro gold coin dedicated to the 600th anniversary of the Livonian Diet and designed by Riho Luuse was issued in October. The design shows a cross interwoven with floral ornamentation that symbolises the unified, certain and continuing growth and spread of Christianity in the Middle Ages. It also shows the year 1422 and the words "Liivimaa maapäev", which are Estonian for Livonian Diet. The obverse side shows the coat of arms of the Republic of Estonia and the year 2022. The coin was minted in the Portuguese Mint and 3000 were minted. Unfortunately there were deficiencies in the coins that were minted, and so Eesti Pank had to stop sales of them. The Portuguese Mint has admitted its error and has promised to replace the deficient coins for everyone who wants them to at the earliest possible opportunity.

Three two-euro commemorative coins were minted

Several commemorative coins are issued each year as well. Commemorative coins are coins that are released into circulation, and that have a special commemorative design on the national side in place of the usual national design to commemorate a particular significant national or European event or topic. The coins are all legal tender throughout the euro area. It was initially planned that two commemorative coins would be issued in 2022, but extraordinary events meant that a further coin was issued for Ukraine and Freedom.

Eesti Pank issued a two-euro coin in support of Ukrainian freedom

Russia shocked the world in February by invading Ukraine, but this also united many countries in supporting Ukraine in many different ways. Eesti Pank also looked for a way to help. It was decided to mint a circulating coin with a special design that would allow financial support to be given to Ukraine through its central bank and the spirit of partnership, and would at the same time send a symbolic message about the value and high price of freedom through a coin that reaches everyone across Europe. It was felt to be important that the coin dedicated to Ukraine and freedom should be made as quickly as possible, and that it should be designed by a Ukrainian. A competition to design the coin was held for art students from Ukraine with the help of the Estonian Academy of Arts. The competition was won by Daria Titova, a refugee from Kharkiv in Ukraine, and her design shows a girl as a symbol of tenderness, protecting a bird in her hand.

It was decided to mint 2 million of the coin, with 40,000 of them as high-quality, brilliant uncirculated coins packaged on coin cards. The coin card was designed by Vladimir Taiger. Eesti Pank is giving the money earned from selling the coin cards to the Ukrainian central bank in the spirit of partnership.

The coin was issued exceptionally quickly. It normally takes more than 18 months to create a two-euro coin with a special design, but in this case Eesti Pank put the coin cards on sale in less than four months, and the two million two-euro coins entered circulation in November 2022, or within just over half a year. Eesti Pank transferred 350,000 euros to the Ukrainian central bank in 2022 that it had received from sales of the coin cards. The coin cards remain on sale, and so it is expected that further donations to support Ukraine will be made in 2023.

A two-euro commemorative coin for the 150th anniversary of the Society of Estonian Literati was issued in March. The coin showed an open book with the words of the first president of the Society of Estonian Literati Jacob Hurt written on it: “Kui me ei saa suureks rahvaarvult, peame saama suureks vaimult”, meaning ‘If we cannot be a great nation in number, we must be great in spirit’, with the year 1872 that the Society of Estonian Literati was founded. The coin and coin card were designed by Riho Luuse and it was minted by the Mint of Finland. There were one million coins minted, of which 10,000 were of BU quality and packaged on a coin card.

A two-euro commemorative coin for the 35th anniversary of the Eramus+ programme was issued in July. Erasmus+ is a European Union programme that funds education, training, youth and sport. The programme is designed to support international studies, promote cooperation between countries, and bring different cultures together. The coin was designed by Joaquin Jimenez and it was issued by all the countries in the euro area. The Lithuanian mint minted one million of the coins, of which 10,000 were of BU quality and packaged on a coin card. The coin card was designed by Indrek Ilves.

Eesti Pank issued a coin folder in November to mark the centenary of the Estonian Border Guard, and it contained one of each of the eight circulating coins minted in 2022. The coin folder tells the story of the border in pictures and words, its importance and the people who stand fast every day so that Estonia can feel safe and protected. The folder was designed by Aleksandr Kanunnikov of Bonamore OÜ, and 7500 were made.

TEN KROONS

1991/1992; 1994; 2006/2007

Designed by: Vladimir Taiger

The back of the banknote shows the Tamme-Lauri oak tree in south Estonia

THE FUNCTIONING OF THE PAYMENTS ENVIRONMENT

Eesti Pank ensures that payments and settlements are made without interruption. The central bank operates as the overseer for important payment and settlement systems by assessing their risks and giving recommendations for making the system more efficient. It also contributes to developing the payments market, and to designing policies and regulation for it. Eesti Pank also has the responsibility for organising vital payment services.

THE PAYMENT SYSTEMS MANAGED BY EESTI PANK

Eesti Pank gives access to pan-European payment systems

Eesti Pank operates TARGET2-Eesti, the Estonian component system of the pan-European automated real-time gross settlement system TARGET2, and the instant payment settlement system TIPS for cash settlements, and is a joint owner of the T2S securities settlement platform. All the systems allow pan-European cash and securities settlements to be made on accounts opened at the central bank. Eesti Pank is also part of the correspondent central banking scheme that allows Eesti Pank's counterparties to transfer securities held in foreign depositories as collateral for monetary policy operations. There were 11 participants using TARGET services in Estonia in December 2022, for whom 13 cash settlement accounts had been opened in TARGET2 and five in TIPS, and four securities settlement accounts in T2S.

Eurosystem projects continued

In 2017 the Eurosystem started a project to consolidate its two infrastructures, TARGET2 and T2S, and this will lead to technical and functional improvements for users of both systems. The target date for the project when it was started was set as November 2021, but in July 2020 the pandemic caused that date to be postponed by a year until November 2022. The Governing Council of the European Central Bank decided in October 2022 to push it back by a further four months to March 2023 on the grounds of ensuring systemic reliability, the readiness of all participants, and a smooth transition. Market participants in Estonia have worked hard on the project and had their new infrastructure ready for use by the end of 2022, but the postponement of the original target date allows them to continue testing to increase reliability further.

One lever that market participants can use to manage their liquidity is borrowing from the central bank against collateral. Development started in 2017 on the Eurosystem Collateral Management System (ECMS), and it will be ready for launch in April 2024. Introducing the ECMS will support the goal of a single system for managing collateral for the credit operations of the Eurosystem that will allow collateral to move freely around Europe. As a new target date was set for the consolidation project and the ECMS project is indirectly dependent on that, the Governing Council of the European Central Bank decided to postpone the target date for introducing ECMS from 20 November 2023 to 8 April 2024.

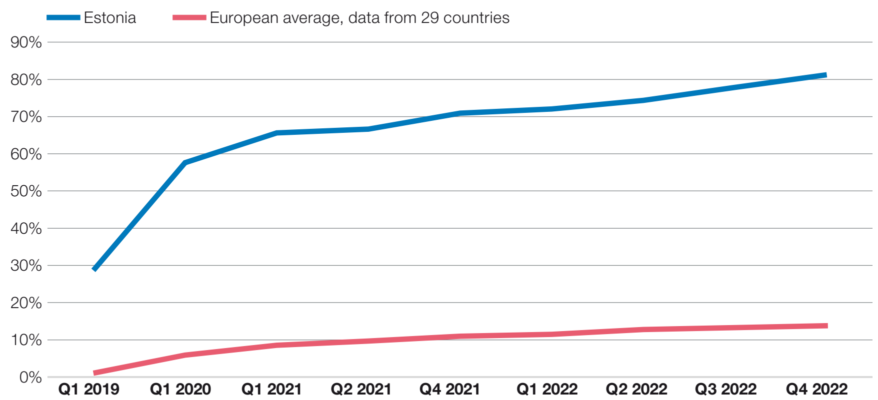
PROMOTING THE PAYMENT ENVIRONMENT

Eesti Pank works with banks, companies and consumer representatives to make the functioning of the payments market more efficient and to develop it. Eesti Pank focused in 2022 on developing the digital euro, introducing instant payments more broadly, and enhancing crisis readiness.

The share of instant payments in Europe is increasing

Eesti Pank worked in 2022 on having instant payments broadly used by participants in the Estonian market so they could be used in as many places as possible. Over 80% of all interbank payments in Estonia have moved to instant payments, covering payments between individuals, and those through banklinks or in e-commerce. Estonia is well above the average in Europe for this (see Figure 12). Payments within banks move immediately as well, and so in practice more than 90% of all the domestic payments in the country are made within seconds.

Figure 12. Share of instant payments in Estonia and Europe



Sources: European Payments Council, EBA Clearing, Eesti Pank

Most of the interbank payments in Estonia are instant payments, while they are much less common elsewhere in the euro area at only 13% of payments. Over the year Eesti Pank shared its experience of this at various meetings and conferences, and publications were issued telling the success story of instant payments in Estonia. Eesti Pank supports the proposal of the European Commission to regulate instant payments, as this would help to increase the share of payments that are made instantly and the security of them. Eesti Pank considers it important that this initiative help the payment environment to function efficiently, and that it be rolled out for market participants as smoothly as possible.

The research phase for the digital euro continued

Eesti Pank continued to play an active part in the two-year research phase for the digital euro as a retail solution that the European Central Bank launched in autumn 2021. Members of the working group set up by Eesti Pank consisting of experts from various fields worked in the working groups and committees of the European Central Bank and coordinated work within Eesti Pank. Members of the Estonian Banking Association and the Estonian Payment Forum, and staff of the Ministry of Finance were informed about the progress of the project and decisions taken during the research phase.

The research in 2022 focused on:

- how to ensure that citizens have access to central bank money in digital form as cash is used less and less for payments;
- how the digital euro can supplement, not replace, cash;
- how the digital euro could strengthen the strategic autonomy and economic effectiveness of the euro area and make payment systems more resilient;
- how residents of the euro area could be empowered to use the digital euro for online and offline payments to one another and for paying for goods and services;
- how residents could use the digital euro for paying taxes and receiving state benefits in digital euros.

Eesti Pank will continue to participate in the research in 2023. The Governing Council of the European Central Bank will take its final decision on developing the digital currency in autumn 2023.

There is also research ongoing into the need for a digital euro in the Eurosystem, and preparations for tests of the opportunities offered by new technological platforms for securities settlements and foreign currency payments. Eesti Pank participates in this work at the committee level.

In parallel with the research project of the central bank, the European Commission started the process of preparing the legislation for the digital euro so that it can make legislative proposals under the Treaty on the Functioning of the European Union, hopefully in the second quarter of 2023.

Digitalisation working group

The working group set up at the joint initiative of Eesti Pank, the Ministry of Economic Affairs and Communications and banks, businesses and consumer representatives in order to support the digitalisation of the Estonian payment environment continued to make progress towards its goals for 2021-2025.

The focus of the working group in 2022 was on clarifying the needs of small businesses, developing digital payment solutions further in physical points of sale and in electronic sales channels, and working to support the transition for businesses to automated reporting.

A survey of card payment options was run among small merchants. Work continued under the leadership of private sector service providers to extend payment solutions and improve ease of use, and to promote wider use of e-invoices and the transition to a European e-invoice standard. A particularly notable digital development was a solution that allows smartphones to be used as payment terminals.

As part of the communication strategy, several training sessions were held for merchants at regional level to encourage businesses to start or continue using different payment solutions and to increase their awareness of the solutions and support measures for them. A lead group was set up at the initiative of the Ministry of Economic Affairs and Communications to standardise the reporting needed for the transition of businesses to data-based reporting and to create the data capacity needed. Eesti Pank will regularly monitor the progress of the action plan of the working group and will give regular reviews of that progress to members of the Payment Environment Forum.

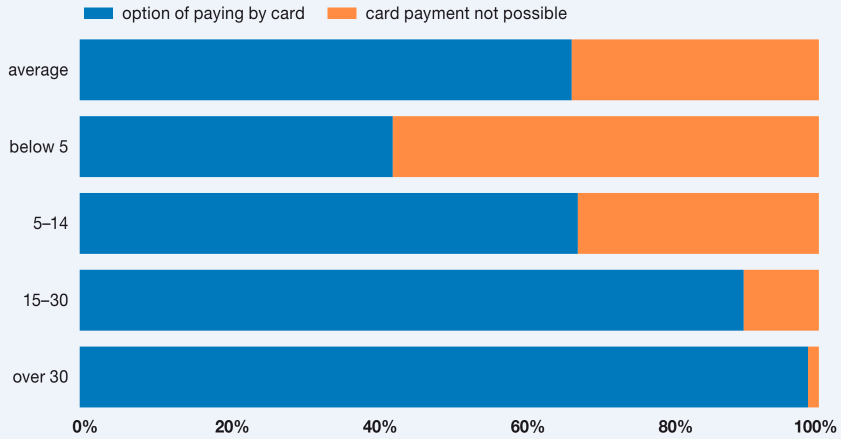
A smartphone solution would make small businesses more interested in accepting card payments

The market research firm RAIT Faktum & Ariko carried out a survey of small businesses in 2022 to an order from Eesti Pank to find out how many of those businesses do not accept card payments and how satisfied merchants that do accept card payments were.

The survey found that whether companies accept different payment options depends largely on the number of payments, as almost all small businesses that make over 30 sales a day accept card payments (see Figure 13).

Around half of small businesses say that the main reason for not accepting card payments is that they want to save costs. They also said that it was a nuisance

Figure 13. Card payment options in different businesses by the number of payments per day



Sources: survey of payment solutions at small merchants, RAIT Faktum & Ariko

to have to own a separate card payment terminal. Card payments would be of more interest to 42% of respondents if they did not need a separate payment terminal and could use a smartphone as a terminal, with a dedicated app for accepting payments.

The biggest differences appear across sectors. The great majority of the food service outlets, at 98% of those who responded, offer card payments, while 84% of shops and other points of sale do so. Card payments are much less commonly accepted though at beautician services, at 45%, and at small companies repairing motor vehicles and other machinery at 48%.

Among those businesses that do not accept card payments, only a tenth said that their clients frequently wanted to pay by card, while half said it happened rarely. Only 1% of businesses responded that they prefer cash payments so that they can minimise their tax reporting. However 8% of respondents noted that purchasers can get the goods or services more cheaply if they pay in cash.

Small businesses that accept card payments were mainly satisfied with the service. A shortcoming that was particularly noted was the cost of the card payment solution. Various outages in the operation of card payments were noted less frequently.

OVERSIGHT OF PAYMENT SYSTEMS

The oversight requirements for card payment systems changed

The card payment system managed by Nets Estonia AS has been subject to oversight by Eesti Pank since 2015. The market share of the system has by now fallen a long way, as the large banks in Estonia process their card payments outside the systems based in Estonia. The need for oversight of the system consequently had to be reviewed. The system is important for the continued operation of card payments and provision of other payment services, and so it will remain under oversight for now, though with slightly looser requirements. This means that Eesti Pank will monitor the operation of the system, identify incidents and analyse the causes of them, and assess the system regularly.

The focus in oversight is extending to the payment market

A broad expansion of oversight was expected during 2022. The draft of the Payment and Settlement Systems Act that had long been under preparation reached the coordination phase in April. This is primarily designed to tidy up the legislation, but it is in the form of a new act under Estonian law. The purpose of the act is to regulate the principles of settlement finality in systemically important payment systems and securities settlement systems, and to define a unified basis for access to payment systems.

The act gives Eesti Pank clear authority to recognise systemically important payment and settlement systems and a firm foundation for oversight. Under the draft act, Eesti Pank will work with Finantsinspektsioon to monitor and assess risks in the payment market and make recommendations for minimising risks. This will consequently expand the risk assessment of the operations of the banks, which currently comes under supervision. The focus needs to be extended to the payment environment as the banks operating in Estonia increasingly use payment systems located in other European countries, or buy services in. The draft act reached the Riigikogu at the end of the year.

The cyber resilience of securities settlement system manager Nasdaq CSD was assessed

Resilience and cyber resilience are important for Nasdaq CSD for it to be able to provide clients and market participants with an effective trading platform and depository services. Eesti Pank worked with the Latvian, Lithuanian and Icelandic central banks to assess the cyber resilience of the Nasdaq CSD.

The assessment was specifically of compliance by Nasdaq with the cyber resilience requirements for financial infrastructure in the Eurosystem, which have been issued by the European Central Bank in the Cyber Resilience Oversight Expectations (CROE) model. The assessment covered all eight areas of the CROE, which are management and governance; identification of critical business processes and information assets; cyber protection; detection of cyber incidents; response to an attack and recovery; testing of cyber resilience; situational awareness; and learning and evolving.

The cyber resilience of Nasdaq CSD is very good, as 240 cyber resilience requirements were assessed, and most of them were well met. Only eight requirements were identified where there was a problem, and 10 recommendations for how to comply with them were issued to Nasdaq CSD. Nasdaq CSD is drawing up an action plan for compliance with the recommendations, and the overseers will monitor how those recommendations are met in 2023.

CRISIS READINESS

The Russian attack on Ukraine caused a change in the approach to crisis readiness

A very important topic for Eesti Pank in 2022 was the continuity of payment services, as the Russian attack on Ukraine provoked serious consideration of scenarios that had not previously been heavily emphasised by the bank as organiser of vital services. The probability of such dangers being realised is small, but if it did happen then the impact would be extremely large. Eesti Pank is consequently taking its preparations for coping in a crisis very seriously.

Organising vital payment services and preparing for any crisis are strategically important tasks for Eesti Pank.

The work that was done in 2022 to ensure that people and businesses in Estonia could use payment services with the smallest possible interruption, and that commercial banks, the central bank and other related parties could be as well prepared as possible for any crisis, included:

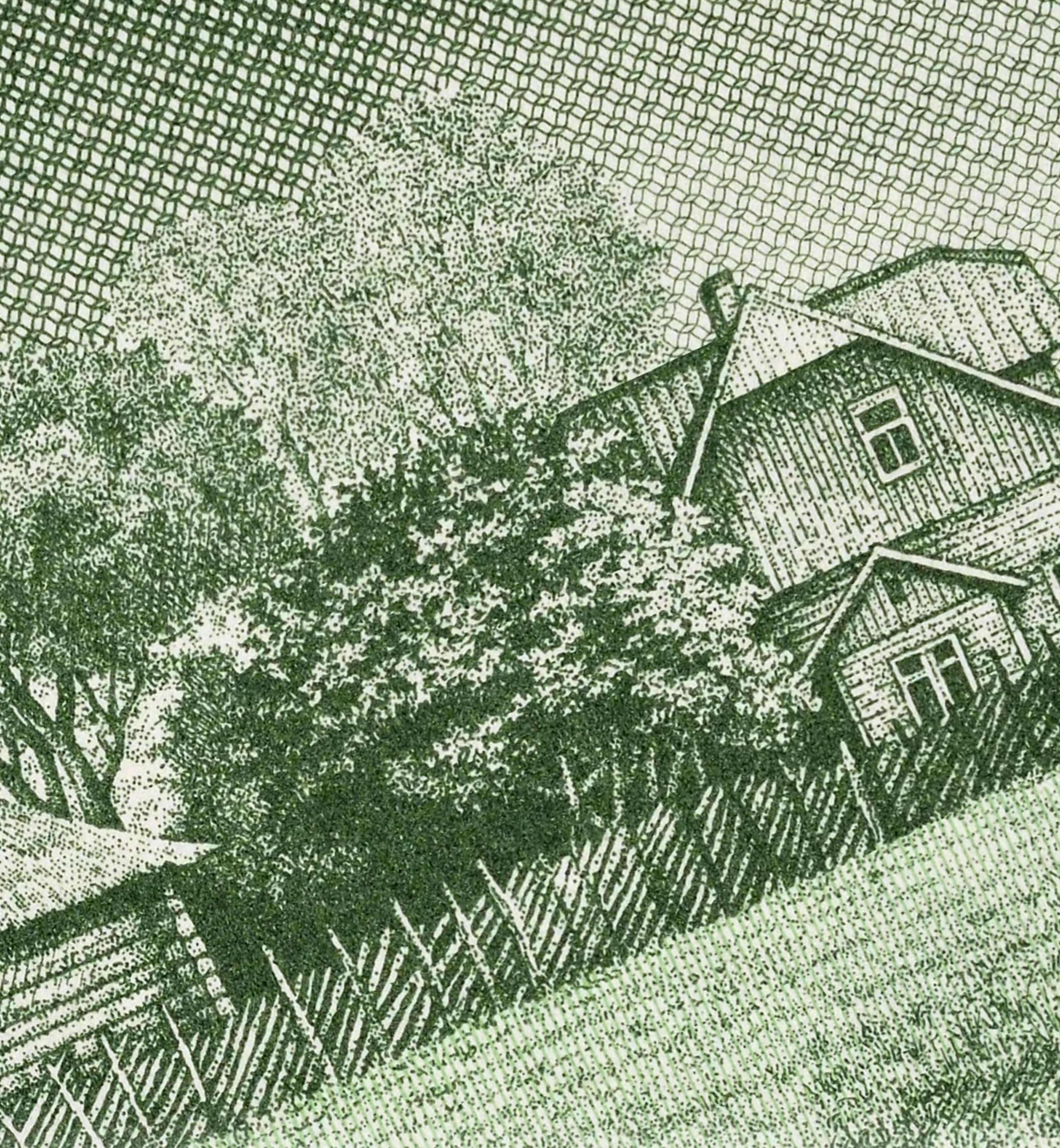
- Helping draft a law on preparedness for emergencies. Eesti Pank proposed widening the group of providers of vital payment services to cover all the banks providing payment services and the more important non-bank payment service providers.
- Changing the current framework for vital payment services and cash circulation in order to ensure services to as many bank clients as possible in an emergency. A further proposal was that providers of payment services need to be ready to provide those services even after the outbreak of military hostilities. Eesti Pank assessed whether service providers were able to ensure the operation of the systems needed for providing services whether or not they are physically located in Estonia, by using cloud services for example.
- Assessing the readiness of the banks to provide payment services in an emergency, defining risk scenarios more specifically, and identifying where the new backup solutions that the banks providing vital services have worked throughout the year to put in place are needed. These backups are:
  - a solution for making card payments if the payment terminal in a shop cannot connect to the bank;
  - a solution for using ID cards for digital personal identification and payment confirmation if access to the state eID service provider is blocked;
  - a solution for sending pensions, wage payments and similar to banks if the usual file payment system does not work;
- Updating the readiness messaging for interruptions to payments.
- Bringing providers of vital services from other areas into discussions and the search for solutions where there is overlap with the provision of payment services, such as for example eID-based authentication, data communications, and electricity supply. Eesti Pank looked at the backup solutions provided for payment services by the Finnish state, and started discussions about them in Estonia.

It is the task of Eesti Pank to make sure that payments move even during failures in interbank payment systems

Eesti Pank has agreed an emergency action plan and technical approaches with Swedbank, SEB, LHV and Luminor as the providers of vital services for ensuring that payments move between those banks if there is no access to pan-European payment systems. The central bank tested the current backup solutions for interbank payments in 2022 together with Coop Pank.

Eesti Pank worked with the banks that provide vital services to look for solutions for a case where the ability of one bank to send and receive interbank payments is restricted. Launching the emergency action plan would currently interrupt the normal movement of payments and would only allow payments to be made in the cordoned off area of the banks providing vital services. Work will continue in 2023.

The reliability of Eesti Pank's own critical processes and measures to reduce the impact of the new risks were also addressed in the light of the new threat scenarios. Preparations were made for Eesti Pank not to depend on infrastructure being physically located in Estonia when doing its work.



TWENTY-FIVE KROONS
1991/1992; 2002; 2007
Designed by: Vladimir Taiger
The back of the banknote shows the Tammsaare-Põhja farmstead

STATISTICS

Eesti Pank is responsible for compiling the statistics for the Estonian financial and external sectors and for the financial accounts and disseminates them to the public to use in making various investment and other economic decisions and in assessing the economic climate. The central bank uses statistics for supporting financial stability and in producing economic forecasts and analysis.

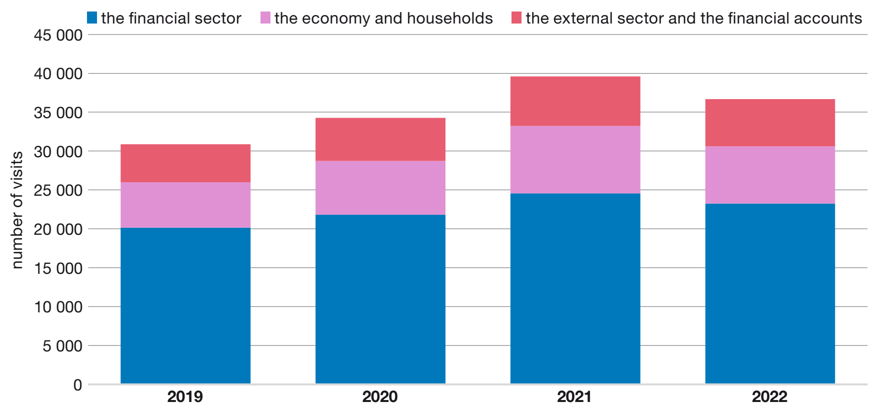
COMPILING AND DISSEMINATING STATISTICS

There is a lot of interest in Eesti Pank statistics

All the processes for compiling statistics functioned faultlessly in 2022 and the planned calendars for disseminating statistics and sending them to international organisations were met without fail in every single case. The quality reports compiled by international organisations recognised the reliability and high quality of Eesti Pank statistics.

The number of visits to the statistics section of the central bank's website was high, and the greatest interest was in financial sector statistics, which are also published in the largest volumes on the website (see Figure 14).

Figure 14. Use of statistics published on the Eesti Pank website



Source: Eesti Pank

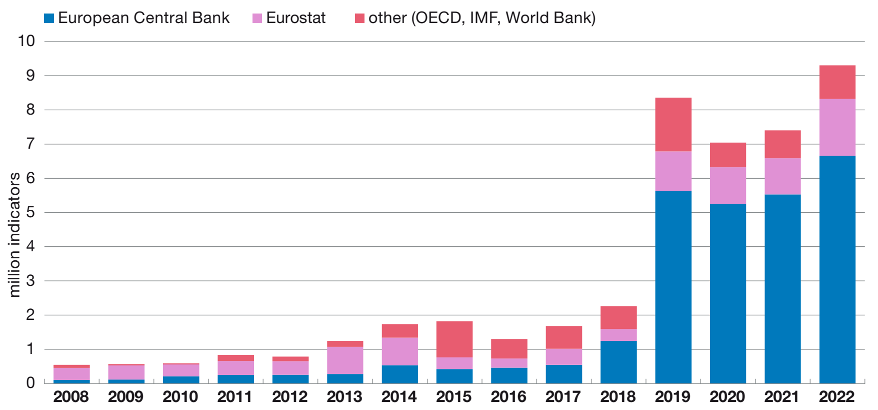
There is interest in Eesti Pank statistics from almost every continent. The Eesti Pank website is mostly accessed by computer, and visits to the statistics section are made directly, through links, and through social media.

The volume of data sent to international organisations leapt up in 2019 and has remained large since then (see Figure 15). The growth in 2022 came primarily from sending much more detailed payment statistics from credit institutions than before to the European Central Bank. The volume of statistics sent to the European Central Bank also increased a little because of an entirely new set of financial sector statistics on financial vehicle corporations engaged in securitisation transactions.

Changes were made to statistical releases

Good practice in statistics calls for the publication of statistics to be accompanied by a statistical release. For the first time in 2022, a full set of the statistical releases that had been introduced gradually over the preceding years appeared on the Eesti Pank website, and a total of 54 statistical releases were published during the year. Small adjustments to the structure of the releases mainly affected the set of figures for the

Figure 15. Volumes of statistical data sent to international organisations



Source: Eesti Pank

statistical release on investment and pension funds, which now shows data on the average nominal return of both mandatory and voluntary pension funds in a quarter, and the share of the increasingly popular index funds in the assets of pension funds. These adjustments were also made in the data tables published on the website.

Recognition from the European Central Bank for the good work in improving the quality of data

Of primary importance when producing statistics to international requirements is that the data used in them be of high quality. The data collected becoming increasingly detailed and the phenomena they describe becoming increasingly complex make it necessary to update constantly the systems and procedures used for checking the data. The largest development work undertaken in 2022 to make data quality checking more efficient came from the update at the start of the year to the reporting of payments statistics by credit institutions. Even greater focus than before was placed on increasing the quality of the balance sheet statistics of credit institutions and of reporting by investment funds, and on checking the quality of the data used for statistics on securities more efficiently. The good work done to ensure the quality of the reporting and the statistics behind it was recognised in the data quality reports by the European Central Bank. It was noted for example that the quality of the detailed loan data supplied by Estonia for the AnaCredit database has for a long time been at the very top level.

The level of detail in the statistics meeting the IMF's SDDS statistical standard increased, and a machine-readable format was introduced

Estonia joined SDDS Plus, the highest level statistical dissemination standard of the IMF, on 11 January, which meant that Eesti Pank started to release new national statistical indicators for the non-financial, financial and government sectors as tables and in machine-readable format. Statistics Estonia contributed the indicators for the state finances for Estonia to join the standard. The goal of taking this step was to raise the transparency and credibility of the Estonian economy and financing even further. By the end of 2022, 29 countries had joined SDDS Plus, of which 21 were members of the European Union. The data can be accessed through the state page managed by Statistics Estonia.

Research continued into the financial assets and consumption habits of households

Information on the assets and consumption habits of households in the euro area, including Estonia, is given by the Household Finance and Consumption Survey (HFCS), which is carried out regularly every three years jointly by the European Central Bank and all the central banks of the euro area. The results of the surveys of households that were postponed until 2021 because of the pandemic and its restrictions were mostly checked, analysed and processed in the first half of 2022. At the same time the survey data were linked to information received from credit institutions, leasing companies, life and pension insurance funds, the real estate register, and other indirect sources of data. The program compiled for imputing data for the previous round of the survey needed to be adapted to fill in the missing data, and this was done jointly with researchers from the University of Tartu. The results of the survey and the data descriptions accompanying them were sent at the end of the year to the European Central Bank for initial checking and confirmation. It is planned to make the dataset from the survey available to users in the first half of 2023.

Preparations started in the second half of the year for the next round of the survey to be carried out in 2024. The budget and the preliminary timetable for the survey were drawn up in cooperation with Statistics Estonia.

DEVELOPMENT OF AREAS OF STATISTICS

Reporting on savings and loan associations became more detailed

To keep the financial sector statistics better up to date and sufficiently detailed, the reporting guidelines for savings and loan associations (SLAs) and creditors were supplemented. Eesti Pank will consequently start to collect much more detailed information on the loans and deposits of the larger SLAs from 2023. The central bank will start to collect from the larger creditors more detailed information on the loans that are not covered by the consumer credit reporting for Finantsinspektsioon. A large amount of work on reporting for credit institutions has been done over several years now as preparation for the European Central Bank's Integrated Reporting Framework (IReF).

Providers of virtual currency services came under scrutiny

A new strategic goal for Eesti Pank is to support the Financial Intelligence Unit in its fight against money laundering and terrorist financing. On top of their regular data sending that started in 2021, the staff at the central bank worked hard on developing reporting for providers of virtual currency services. It is planned that a regulation of the Ministry of Finance will define integrated reporting and the data collected will start to be used by Eesti Pank for statistical purposes and by the Financial Intelligence Unit in its work. The reporting rules were set out at the start of summer, and it was planned to apply them from the start of 2023. The agreement is that Eesti Pank will start to receive the reports, as the central bank has the most appropriate infrastructure for doing so. There was a delay in issuing the regulation, and so the introduction of reporting will now be postponed until probably the second half of 2023. Work was also done with the providers of virtual currency services to reflect their activities better in the current reporting system used by Eesti Pank.

Participation in updating international statistical standards

International organisations, led by the IMF, are preparing for a transition to new international standards for the balance of payments and the system of national accounts.

Working groups of experts from various fields have been put together specially and are preparing the new guidelines, which in their final state will be sent out internationally for comments and recommendations. Experts in statistical methodologies in the statistics department of the central bank took part in the work in 2022 by answering surveys, analysing the proposals, and commenting on them. The initial version of the updated handbook should be completed during 2023, and it will be published in the first half of 2025.

DEVELOPMENT OF INFORMATION SYSTEMS FOR STATISTICS

The main emphasis was on a public procurement for developing a system for data processing and analysis

Eesti Pank uses centralised applications for collecting data and for disseminating statistics and the first half of 2022 was mainly spent on preliminary analysis for a new system in cooperation with an external partner. Eesti Pank announced a public procurement in the second half of the year and consulted with the applicants who qualified for the procurement to develop the best solution for the procurement and clarify the technical description. The information received during the consultation was used to tighten up the technical description in the procurement documents, and several examples were attached to explain better the business need.

Companies that qualified for the public procurement were then invited to submit final tenders. Two years have been allowed for the development of the new data processing and analysis system from when the procurement contract is signed, and this will then be followed by an installation phase.

Development of the ATLAS system for processing and analysing statistical data

For historical reasons, various applications are used for processing and analysing data to produce statistics, and some of them are old and technically outdated, and no longer meet the requirements. Ever-increasing volumes of data and levels of detail in the data require ever greater computing power and more visualisation of the data. The need has also arisen for solutions that are more flexible and easier to automate and that would allow centralised solutions to be run, so making the whole process of statistics more efficient, while managing various risks better and coping with the constant addition of new statistical tasks.

ATLAS needs to allow the maximum possible amount of automation, standardisation and integration in the process of statistics. Integration means that where possible each indicator should only be calculated once within the system. This means that the system by its nature reuses data a lot and the outputs are highly interdependent, which makes managing the whole process more complicated but ensures that the statistical outputs are more consistent and of higher quality. Standardising the processes will greatly reduce risks, make it easier to plan cover for staff, and allow the preparation of statistical outputs to be rotated between staff members.

WORK WITH OTHER INSTITUTIONS

The first steps towards setting up a data exchange service between Statistics Estonia and Eesti Pank

To make the work of economic analysts and forecasters at Eesti Pank as effective and timely as possible, a new statistical action “Servicing the Eesti Pank forecasting and economic analysis models” was added to the programme for 2022. This is intended to ensure that the analysts at the bank have need-based access to the anonymised microdata on companies and individuals in the databases of Statistics Estonia. To do this, a data exchange service has been created jointly with Statistics Estonia that will ensure that databases are accessible and are updated over time as new data are received by the databases. It covers various areas such as the economic activity of businesses, taxation, employment, education, the welfare of households and more. The content of the data that are needed was agreed in the first half of the year, and information technologists from the bank and Statistics Estonia defined the technical architecture of the data exchange service. Testing started on the data exchange channel in the second half of the year.

FIFTY KROONS
1994
Designed by: Vladimir Taiger
The back of the banknote shows the Estonia Opera and Ballet Theatre

RESEARCH, CONSULTATION AND COOPERATION

It is the task of Eesti Pank to support stable and sustainable economic growth in Estonia and the euro area. Eesti Pank does this by working together with other central banks, international institutions and scientific institutions, and by advising the government. Analysis and research by the central bank are used by the government in deciding economic policy, and also by the private sector in making financial decisions.

ECONOMIC ANALYSIS AND MONITORING

The results of the analysis work are published to a large extent in the regular reports of Eesti Pank.

The goal of analysis at Eesti Pank is to support the bank in carrying out its core functions. This work covers three areas, which are analysis of the economy with the monetary policy outlook, analysis to support financial stability, and analysis to aid the development of cash circulation and payment systems.

The set of reports published by Eesti Pank has remained constant in recent years. The following reports were published on the Eesti Pank website in 2022:

- The Financing of the Economy was released in February and covered how non-financial companies and banks are able to fund themselves. It also looked at the affordability of housing and the growth in the financial assets of households.
- The Competitiveness Report issued in March analysed the usual indicators of competitiveness, and also considered the long-term impact of climate change and risk assessments for the transition to a green economy.
- The Financial Stability Review was published in April and November. It assessed the risks to the stability of the financial system and reviewed the macroprudential measures taken by Eesti Pank, and also covered several other topics. It considered the risks related to the transition of the banking sector to a climate-friendly economy and those of commercial real estate, and analysed how the reform of the second pension pillar had affected the financial results of pension funds. It also explained how cyber risks affect vital banking services.
- The Labour Market Review released in April analysed inactivity among the working-age population before and after the Covid-19 pandemic, and the role of refugees from the war in Ukraine in the Estonian labour market. It also assessed how the structural changes in the labour market have affected growth in productivity, and compared the minimum wage levels in Estonia and in other European countries. The review published in November looked at employment in the public sector and start-up firms, and analysed the connections between rising consumer prices and wages.
- The quarterly review of the Estonian Economy and Monetary Policy discussed key topics for the economy, and gave an updated review of the performance of the economy.

Eesti Pank also published its regular commentaries and press releases on the Estonian economy, and blog posts on topical issues.

FORECASTING

Eesti Pank produced four economic forecasts in 2022 in March, June, September and December. Two of them contained a forecast that was compiled in cooperation with the European Central Bank and other central banks of the Eurosystem. The euro area forecast, which is a key input for the Governing Council of the European Central Bank in taking monetary policy decisions, is based on the individual national forecasts of the member states made in June and December. In March and September the forecast of the euro area is made for each country, but by the European Central Bank. The euro area forecasts are coordinated by the monetary policy committee of the European Central Bank, which is the umbrella for the working groups on forecasting, state finances and the development of forecasting models.

Experts from Eesti Pank helped compile the forecasts for the Estonian economy produced by the European Commission and the OECD.

Forecasting was no easier than it was during the pandemic

The Estonian economy recovered well from the Covid-19 outbreak and it appeared from the new year that the danger from the virus fading and new data arriving made it already possible to estimate the long-term impact of the pandemic on global supply chains, relative prices and the potential for growth in the Estonian economy, and to get new more reliable reference points for forecasting. The start of the war between Russia and Ukraine at the end of February blew that hope away, and it became even harder to produce an outlook for the economy.

How to estimate the impact of the war remained topical throughout the forecasting year. Boxes and special reports considered the direct impact of the war, and the indirect impact on trade flows experienced through Estonia's trading partners. Although Estonia shares a border with Russia, exports of goods and services to Russia before the pandemic were not more than 4-5% of total exports, and the main impact of the rupture in trading relations was to be expected more through the import channel and through higher prices for raw materials like wood, metals and fertilisers. The steady imposition of sanctions on Russia and the Russian counter-sanctions made the assumptions used in forecasting foreign trade very uncertain.

The impact of the war had to be estimated more and more

It was clear at the time that the forecasts published in second half of the year were being made that high inflation, tighter monetary policy and the war in Ukraine were having an increasingly deleterious impact on the global economy. The explanatory report that accompanied the forecast consequently featured a box on the competitiveness of Estonian exporters and the change in their market share, and again estimated the impact of Russia's military activities on foreign trade. Wide volatility in financial and commodities markets had reduced confidence about the future, and also started to restrain activity in the economy. The impact of uncertainty on the Estonian economy was looked at more closely in a separate box.

A topic of discussion in the labour market was the arrival of a lot of refugees of working age from Ukraine. There were gaps in the official statistics covering the role of refugees in the labour market, but their impact on both employment and the unemployment rate was considered in the forecast.

Prices in the consumer basket had started to rise more broadly, but a fall in inflation could be forecast by the final months of the year, partly because of government efforts to set a ceiling for energy prices and to use subsidies to reduce energy costs.

It was confirmed though in the summer that the Estonian economy had entered a recession, and that some reduction in GDP could be forecast for the whole year. It was expected in the second half of the year that the general cooling of the economy would reach the labour market.

RESEARCH

Research focused mainly on monetary policy and financial stability

The monetary policy and research department of Eesti Pank mainly focused on researching monetary policy and financial stability, and on development of the macroeconomic and banking sector models. Eesti Pank published seven working papers in 2022 presenting the research results of Eesti Pank economists and visiting researchers (see Appendix 3). The working paper series focuses on research based on economic modelling and each paper goes deeply into one topic. Alongside the results of research projects, the working paper series of Eesti Pank published articles from peer-reviewed scientific journals. Eesti Pank economists and visiting researchers together authored or co-authored 12 research papers that were published or accepted for publication in 2022 (see Appendix 3). The results of research work were also presented at international scientific conferences. Open seminars were organised again, with six guest lecturers speaking at the bank.

International and domestic research partnerships continued

Staff from the research department participated in 2022 in the Household Finance and Consumption Network run by the central banks of the euro area, the Working Group on Economic Modelling, and the Expert Group on Productivity of the Economic Forecasting Working Group. Three guest researchers came to work at the bank as part of the visiting researcher programme. The Eesti Pank research award in memory of Urmas Sepp went to Triinu Tapver in the doctoral category for her work on the returns on investment funds in Central and Eastern Europe in 2005-2019. The winner in the master's category of the research award was Pearl Etie, who researched ways of reducing the sovereign debt crisis through a debt relief programme in Sub-Saharan Africa. Under an agreement on research cooperation between the University of Tartu and Eesti Pank, staff from the bank gave two courses in the university on macroeconomics and econometrics.

CONSULTATION

By law, the government does not take any important economic policy decisions without first listening to Eesti Pank's opinion

The Eesti Pank Act does not specifically limit the topics on which the bank gives advice. Eesti Pank's areas of expertise are primarily balanced economic development and the stability of the Estonian financial sector, and in relation to that, the development of the European economic and monetary union. The core tasks of Eesti Pank equally presume its participation in discussions on financial innovation and crypto assets and on the creation of digital central bank money, or the digital euro.

The Eesti Pank strategy and work plan call for the bank to be involved in achieving the goals of climate policy. Eesti Pank is ready to contribute to assessing and analysing the impact of the transition to an economy with reduced CO_2 emissions, and to join in discussions about green finance.

The most important European Union-level topics that affected Eesti Pank in 2022 were the development of the banking union and the capital markets union, and Eesti Pank is the government's main advisor on these topics. In the second half of the year, the European Commission revived the discussions on reforming the economic governance framework of the European Union that had been put on pause by the outbreak of the Covid-19 pandemic. The key part of this for monetary policy is the section that regulates the fiscal policy of member states and ensures the sustainability of their debt.

In giving its advice, Eesti Pank uses information from its regular economic forecasts and ongoing monitoring, and from its participation in the work of the Eurosystem. The economic research unit also has some projects under way each year with practical application.

Eesti Pank avoids taking positions on topics where the choices essentially depend on political decisions and points of view.

Fiscal policy has a role in bringing inflation down

Inflation was much higher than expected in 2022, and the main reason for that was the very sharp rise in the price of energy and fuels. Most of the central banks around the world, including the European Central Bank, tightened their monetary policy in consequence. The monetary policy measures of the central bank have only a small direct impact on the prices of commodities and energy though, and interest rate decisions affect total demand primarily. It should be remembered here though that total demand is also affected by fiscal policy. Leaving aside the extraordinary expenses of the crisis years, a general easing of fiscal policy can be observed since 2015, and the general government fiscal deficit is forecast to fall below 3% of GDP only after three or four years[8]. A persistent fiscal deficit encourages inflation though.

Eesti Pank recommended that the government restore balance to the budget as quickly as possible, and maintain a focus on the need to reduce inflation pressures in order to support households and businesses. Public statements by Eesti Pank emphasised that if the stable development of the country requires more than before to be spent on certain fixed costs, such as healthcare and national defence for example, then other current expenditures must be cut or new sources of income must be found.

Crisis measures must be passed quickly and must be well targeted

During the pandemic, the government injected money into the economy to ease the recession and preserve jobs, but the steep rise in prices for fuel and energy made it necessary to ease the impact of that for households and businesses.

Eesti Pank underlined in its communications that energy will remain expensive until the problem of the shortage of supply is resolved. This means that the government should primarily support those who have most need of help. Higher energy prices have different effects for people with different income levels and different branches of the economy, and so it is important for additional state aid to be accurately directed and temporary to avoid provoking general inflation.

Members of the Executive Board met regularly with political leaders and the private sector

Members of the Eesti Pank Executive Board met several times with the President of the Republic and the Prime Minister to discuss the outlook for the Estonian economy and the risks caused by Russia's military aggression. Regular meetings were

8 The fiscal position of the general government improved temporarily in 2022 as inflation was much higher than expected and so the growth in tax revenues was much greater than had been expected when the budget was planned.

also held with the main ministries that Eesti Pank works with, and with members of the Riigikogu, and members of the Economic Affairs and Finance Committees of the Riigikogu. Members of the Eesti Pank Executive Board and experts from the bank were also involved in the work of the state crisis committees. Multilateral cooperation was also managed in other working forums such as joint professional seminars and working groups.

Meetings with the private sector, whether business leaders and heads of banks or professional associations and similar organisations, have become the norm. There was a lot of discussion about high inflation and about readiness to cope with crises. Experts and leaders from the central bank were in demand as speakers at conferences and seminars in Estonia and abroad. Several presentations touched on the change of course in the monetary policy of central banks.

Eesti Pank continued to organise public discussions on important topics of economic policy

President of the European Central Bank Christine Lagarde visited Tallinn in November to give a public lecture at Eesti Pank as part of the series of lectures dedicated to Professor Ragnar Nurkse. Mme Lagarde give a lecture on the monetary policy of the euro area that explained the causes of high inflation in the euro area and the readiness of the central bank to take difficult decisions to tackle high inflation. If it did not, the consequences will be much more serious for everybody she warned, quoting Nurkse that: “when a price rise goes on for some time […] it tends to create expectations of a further rise. The point at which such expectations come to be firmly and widely held is a crucial one in the process of inflation. From that point onwards, the process is entirely changed”.

Mme Lagarde argued in conclusion that by committing to fulfilling its obligations and giving a clear message about the measures it is taking, the central bank will succeed in bringing inflation back down to its target level.

Eesti Pank also organised a public seminar in November that analysed the causes of high inflation, ways that it could be eased, and its impact on the competitiveness of Estonian businesses.

In June Eesti Pank celebrated the 30th anniversary of the entry into circulation of the Estonian kroon with a seminar where some of the key figures of the time and a foreign guest the vice president of the German Bundesbank, Claudia Maria Buch, shared their memories of the reform. Ms Buch looked back at the social processes of 30 years ago and drew out lessons for Europe today. The current Governor and former Governors of Eesti Pank then held a discussion on the challenges and opportunities facing the Estonian economy.

INTERNATIONAL COOPERATION

Eesti Pank’s main partner in international cooperation is the European Central Bank

The Governor of Eesti Pank works in the Governing Council of the European Central Bank with the heads of the other central banks of the euro area to set monetary policy for the euro area. Many staff from Eesti Pank are involved in the committees and working groups of the European Central Bank. Larger challenges, such as the creation of the integrated reporting framework for banks for example, or the possible introduction into circulation of a digital euro, are handled by high-level working groups where executive board members participate.

The biggest change in policy for the European Central Bank in 2022 was the end of negative interest rates and the redirection of monetary policy towards normalisation. Interest rates were raised for the first time since 2011 in response to rising inflation. At the same time the economic support measures provided during the pandemic crisis were ended, or started to be reduced.

Eesti Pank represents the Republic of Estonia in the IMF

A major partner for cooperation with Eesti Pank is the International Monetary Fund (IMF), which monitors economic developments in member states, gives them advice and offers financial assistance if needed. Estonia is part of the Nordic-Baltic Constituency, which consists of eight countries and is represented by one director in the Executive Board of the IMF. In January 2023 the Nordic-Baltic Constituency will have its first director from the Baltic states when the position is taken by Vitas Vasiliauskas, a former governor of the Lithuanian central bank. Estonia will participate in leading the constituency alongside Lithuania and Latvia for the first time during the Baltic director's three-year mandate. The central banks of the three countries worked closely in 2022 to prepare for the directorship, and signed a Memorandum of Understanding on it in May.

Eesti Pank is becoming more involved in the work of the IMF. Eesti Pank signed the SDR[9] Voluntary Trading Agreement in 2021, under which Eesti Pank is ready to buy and sell SDRs within the conditions and limits agreed in advance with the IMF. Eesti Pank decided in 2022 to deposit a part of the SDRs distributed to Estonia in 2021 with the IMF's Poverty Reduction and Growth Trust (PRGT) and the new Resilience and Sustainability Trust (RST), which provides long-term financing to tackle structural macroeconomic challenges, primarily climate investments.

Russia's attack on Ukraine brought a lot of uncertainty into the global economic environment

This was also an important topic for the visit to Estonia by the IMF delegation under the Article IV consultations in May 2022. The IMF considered that the outbreak of the war in Ukraine had raised inflation and made the outlook for the Estonian economy more uncertain thereby lowering the expected rate of economic growth. The IMF recommended making good use of fiscal spending to address the increasing numbers of refugees, defence costs, and energy problems. The IMF warned that increased spending by the government could put additional upward pressure on inflation. It recommended that if high inflation does not come down, the budget deficit should be cut faster and by a larger amount than was planned. Funds from the European Union should also be used to promote the green and digital transitions. Energy subsidies should be well targeted to households with lower incomes. Much greater investment is needed in alternative suppliers of natural gas in order to ensure energy security, together with an expansion of renewable sources of energy. Labour market policies should be advanced further to develop the skills of workers and integrate Ukrainian refugees into the labour force. The IMF recommended that in the medium term, Estonia should further strengthen its social insurance system and increase public sector investment, while taking account of its current spending targets.

Eesti Pank has close direct contact with the central banks of the Baltic and Nordic countries at the management level and at the level of experts for handling other topics besides those of the IMF that are of mutual interest. There is constant cooperation on

9 Special Drawing Rights (SDR) are the IMF's units of account, which were created to make an artificial reserve currency that countries could also use in accounts between themselves. Further information on SDRs was published in a blog post on the Eesti Pank website on 17 November 2021.

international issues in Estonia with various ministries, and the positions of the IMF on key issues of economic policy are discussed in the committees of the European Union and the European System of Central Banks.

Participation in the work of the organisations of the European Union

Staff from Eesti Pank work with colleagues from the Ministry of Finance in the bodies of the Council of the European Union. The Governor of the bank attends the informal meeting of economic and financial affairs ministers of the European Union twice a year.

The most important of the discussions in the European Union for Eesti Pank in 2022 concerned the impact of the war in Ukraine on the economy of the euro area and the European Union support measures to ease the impact of higher energy prices, draft proposals related to the European Union strategy for digital finance and retail, the strengthening of the anti-money laundering supervision framework, and issues around the banking union and the Capital Markets Union. The reform of the European Union's economic governance framework was also important for the central bank in terms of single monetary policy.

The work of Eesti Pank in other international organisations and working groups

Experts from Eesti Pank participate in the Organisation for Economic Co-operation and Development (OECD) forums discussing economic and financial sector policy. The Governor of Eesti Pank attends meetings at the Bank for International Settlements (BIS), where the main focus is on the development of standards for the financial system. Eesti Pank has been a member of the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) since 2020. Experts from Eesti Pank participate in drawing up future scenarios for the impact of climate change on the economy, the financial sector and price stability, and in making proposals for how to align monetary policy and the other core tasks of the central bank with the new environment. A new line of work will identify and analyse the financial risks of damage to the natural environment and to biodiversity. Separately, cooperation between the NGFS members from Europe is becoming closer.

Information on the organisations that Eesti Pank participates in is given in Table 3.

Table 3. Eesti Pank's participation in the work of international organisations and institutions

European System of Central Banks	
Governing Council of the European Central Bank	Madis Müller, Ülo Kaasik
General Council of the European Central Bank	Madis Müller, Ülo Kaasik
Supervisory Board of the European Central Bank (SSM)	Veiko Tali, Timo Kosenko
Eurosystem High-Level Task Force on cooperation	Ülo Kaasik
European Central Bank High-level Task Force on the reporting framework	Veiko Tali, Jaanus Kroon
European Central Bank High-level Task Force on Central Bank Digital Currency	Veiko Tali, Rainer Olt
Public Relations Committee	Viljar Rääsk, Ingrid Schmuul, Hanna Jürgenson
Budget Committee	Helga Käärik, Helen Riitsaar
Financial Stability Committee	Jaak Tõrs
Information Technology Committee	Ahti Roosa, Jarmo Inkinen
Committee on Controlling	Helga Käärik, Helen Riitsaar
Market Infrastructure and Payments Committee	Rainer Olt, Kaire Torsus
Organisational Development Committee	Anu Randveer, Pille Parmas
Banknote Committee	Rait Roosve, Margot Luukas

Human Resources Conference	Kadi Kapral
Accounting and Monetary Income Committee	Liivi Teder, Merle Ilvest
Monetary Policy Committee	Martti Randveer, Peeter Luikmel
International Relations Committee	Maris Leemets, Reet Reedik
Risk Management Committee	Kaari Kumari, Gerlyn Peetson
Internal Auditors Committee	Henn Oit, Janno Kase
Statistics Committee	Jaanus Kroon, Ain Paas
Market Operations Committee	Fabio Filipozzi, Kristel Leo, Kersti Harkmann
Legal Committee	Meelis Mark, Marek Feldman
European Central Bank forum on climate change	Maris Leemets, Margot Luukas
Council of the European Union	
Informal Council of Economics and Finance Ministers	Madis Müller
Economic and Financial Committee	Veiko Tali, Indrek Saaper
European Commission	
European Commission and European Central Bank statistics forum	Jaanus Kroon
Committee on Monetary, Financial and Balance of Payments Statistics	Jaanus Kroon
Organisation for Economic Co-operation and Development (OECD)	
Economic Policy Committee	Ilmar Lepik, Lauri Matsulevitš
Financial Markets Committee	Taavi Raudsaar
International Monetary Fund (IMF)	
Board of Governors	Madis Müller
Nordic-Baltic Monetary and Financial Committee	Ülo Kaasik, Maris Leemets
European Systemic Risk Board (ESRB)	
Steering Committee	Madis Müller
General Board	Madis Müller, Ülo Kaasik
Advisory Technical Committee	Jana Kask
European Banking Authority (EBA)	
Board of Supervisors	Timo Kosenko
Bank for International Settlements (BIS)	
Board of Governors	Madis Müller
Irving Fisher Committee on Central Bank Statistics	Jaanus Kroon
Committee for heads of security at central banks	Rait Roosve
Network of Central Banks and Supervisors for Greening the Financial System (NGFS)	
Representative at the plenary meeting	Veiko Tali

Only those committees and forums that had meetings and discussions in 2022 are listed in the table.

PUBLIC RELATIONS

Public relations work at Eesti Pank is based on openness and the clarity and credibility of messages

For Eesti Pank to be able to do its work successfully, it is important that as many people as possible understand that work and its aims. For this reason, public relations at Eesti Pank focuses on making sure that the positions and opinions of the bank are credible, clear and publicly available in a timely manner. The messages concentrate on the aims of the bank's work and on why that work is important for the reader from their own perspective. If the public, whether investors, businesses or households, knows what to expect from the central bank, then their own expectations for long-term inflation should congregate quite closely around the target of 2%. Expectations affect how people behave in the economy, and this is finally expressed in actual economic figures.

The focus for the central bank was on high inflation

Eesti Pank presented its analysis of the economy and the financial sector in its regular statistical releases and economic commentaries, and also in ten press briefings that were broadcast live on the internet. Speakers also started for the first time in 2022 to answer questions received in real time from the public during briefings. Experts from the central bank published 24 blog posts discussing various aspects of the bank's operations and analysing the economy and the banking sector. Among them were articles from the series by the Governor of Eesti Pank reviewing the state of the economy in the euro area after each meeting of the Governing Council of the European Central Bank, and explaining what the council had consequently decided to do. Members of the Eesti Pank Executive Board and experts from the bank appeared at various events to explain the view of the central bank on economic and financial issues.

Thirty years since the monetary reform of the kroon

One of the most important events after Estonia regained independence was the introduction of Estonia's own currency, the kroon, in June 1992. Eesti Pank hosted a seminar to celebrate the anniversary of the monetary reform, and released a series of video interviews in which people involved in the reform spoke about their memories of it. An exhibition was open throughout the summer for visitors to the museum of the central bank that presented details from the pencil drawings made by the designer of the Estonian kroon Vladimir Taiger. A public exhibition in Tammsaare park in Tallinn told the story of the monetary reform and the events and people involved to mark its 30th anniversary. There was a travelling exhibition dedicated to the monetary reform that showed the designs for the Estonian kroon coins and paper notes.

A year of exhibitions in the Eesti Pank Museum in 2022

The museum was also involved in other exhibitions in 2022. In September the museum joined with partners from Latvia and Lithuania to put on an exhibition for the centenaries of the national currencies the litas, the lats and the kroon. There were 289 items from the collection of the Eesti Pank Museum in the exhibition, including printing plates, proofs, an imitation gold bar, and interwar coins and notes from the Republic of Estonia. The exhibition is being shown in all three Baltic states, and it will be in the Estonian History Museum in Tallinn from 15 June to 10 December 2023.

The museum put on an exhibition of coins with spokes in October that was put together jointly with the Pärnu Museum and The Estonian Association of Jewellery and Blacksmiths. Jewellers were invited to exhibit their own interpretations of modern coins with spokes, which were to be based on the one-kroon collector coin issued by Eesti Pank in 1999 for the 130th anniversary of the Song Celebration. The aim of the project was to create a modern interpretation of traditional coins with spokes and 12 coins were featured in the exhibition.

The traditional events for the anniversary of the Republic of Estonian and the restoration of independence were held in the museum. Seminars for teachers and a family day for financial literacy were organised jointly with Finantsinspektsioon and the Ministry of Finance.

The travelling exhibitions of *Euro cash* and *Estonian currency from the mark to the euro* went on show in educational institutions and visited 12 schools in 2022.

The museum had a little over 12,000 visitors during the year, and more than 2200 pupils and students attended the educational programme and lectures. The collection of the museum was supplemented with 352 additional items.

Preparations will continue in 2023 for a reform of the museum, including refreshment of the permanent exhibition.

ONE HUNDRED KROONS
1991/1992; 1994; 1999; 2007
Designed by: Vladimir Taiger
The back of the banknote shows stormy waves breaking against the northern Estonian limestone cliffs

FINANCIAL ASSET MANAGEMENT

RESERVE MANAGEMENT

Eesti Pank holds reserves in order to ensure the credibility of the Eurosystem, support the Estonian economy and financial system, and protect the financial independence of Eesti Pank. It follows from these goals that it is important for the central bank over the longer term to have an investment portfolio that is well diversified, partly so it can help smooth sharp prices fluctuations in the short term, and partly so it can withstand shocks better to earn a stable return over the long term. For this reason the central bank reserves are mainly invested in safe and reliable securities issued in large international financial markets, where there is only a small risk of permanent capital loss.

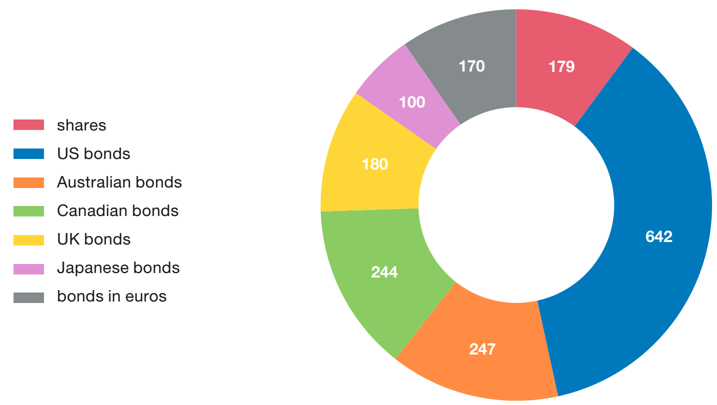
The strategic allocation of assets in the investment portfolio expresses the risk appetite of Eesti Pank to a five year plan, and this plan is reviewed at least once a year. The final decision about the allocation of assets is taken by the Executive Board of the bank with support from the benchmark portfolio committee.

At the end of 2022, Eesti Pank's portfolio of investment assets stood at 1760 million euros. The size of the reserves is assessed regularly so that they can better meet the targets set for them. The reserves need to be large enough that they can support the financial system and the economy in a critical situation. The portfolio of investment assets is currently equal to around 5.2% of gross domestic product in size.

The central bank mainly invests in high-quality bonds

Eesti Pank's investment assets at the end of 2022 were mainly in high-quality bonds, and partly in the stock markets of advanced economies. The bond portfolio stood at 1580 million euros at the end of the year, and the equities portfolio stood at 180 million euros (see Figure 16). Investments are made in equities mainly to diversify risks, but also to earn additional income. The foreign currency reserve was made up of sovereign bonds from the USA, Australia, Canada and the United Kingdom, bonds of international institutions, and mortgage-backed securities in the USA. The majority of the bond portfolio contained US Treasury bonds. Bonds that were issued by the Canadian state to support Ukraine were purchased for the Canadian bond portfolio in 2022.

Figure 16. The structure of Eesti Pank's investment assets in million euros



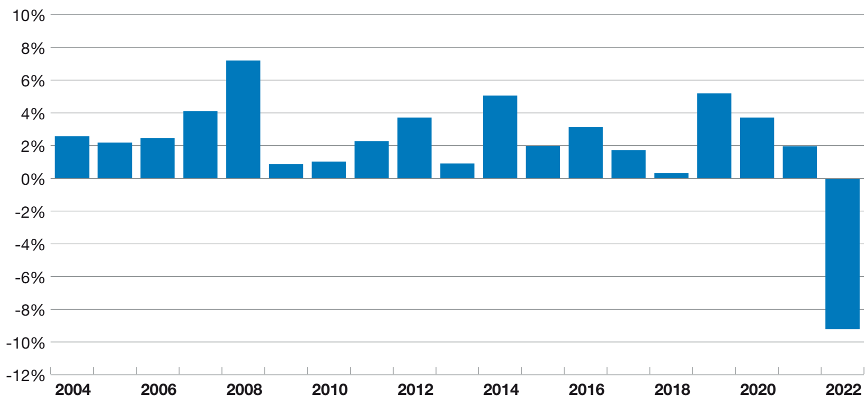
Source: Eesti Pank

The bank also had 14.1 million euros of gold. Eesti Pank has very little gold, in total only 256.6 kg or 8250 ounces, and holds it more for historical reasons than for financial reasons. Eesti Pank sold the majority of its gold assets when Estonia regained its independence, to exchange them for bonds, which allowed the goals set for the reserves to be met better.

The general fall in markets also caused losses for the central bank.

The return on Eesti Pank's investment assets was -9% in 2022, meaning a loss of around 157 million euros. This was the largest loss in the history of investment by the central bank (see Figure 17). The results were negative for both the equity and bond portfolios as both asset classes were hit by the general fall in prices. The result at the end of the year was the largest loss ever for bond investors. The main cause was the rise in inflation globally to its highest levels of the past decade, which central banks moved to arrest by tightening monetary policy sharply. The extraordinarily steep rise in interest rates caused a broad general fall in the prices of bonds, and it also proved unfavourable for risk assets. Stock markets around the world consequently ended the year substantially lower. The fall in the prices of equities in the USA was offset by the appreciation of the dollar.

Figure 17. Return on investment assets, million euros



Source: Eesti Pank

The benchmark portfolio decides a large part of the investment results for Eesti Pank, but the portfolio managers of the bank can take more active positions than the benchmark portfolio within the risk limits they have been set in order to improve the overall risk and return ratio of the investment portfolio. Additional income from active investment over the benchmark portfolio was positive in 2022.

PROVISION OF ASSET MANAGEMENT SERVICES

Asset management services are provided as a full service to the Guarantee Fund, with the goal of protecting the money of depositors, investors and shareholders in local pension funds. The investment portfolio of the Guarantee Fund amounted to 291 million euros at the end of 2022.

Eesti Pank also works with Suomen Pankki, the Finnish central bank, in managing over 1 billion US dollars of the European Central Bank's foreign currency reserves. The main focus in managing the reserves of the European Central Bank is on liquidity and on maintaining value, so that it is available for use at any moment for a foreign currency intervention by the Eurosystem. More details on reserve management by the European Central Bank can be found in that bank's annual report.

CLIMATE-RELATED SUSTAINABLE INVESTMENT AT EESTI PANK

Reserve management at Eesti Pank recognises climate risk as a financial risk

The impact that climate risks could have on the pricing of assets and the performance and risk-return profile of investments has highlighted the importance of acknowledging, identifying and disclosing these risks as a source of financial risk. Integrating broader environmental considerations and introducing decarbonisation targets into the framework for investment management also helps advance global sustainability goals.

Eesti Pank is seeking to have an investment portfolio that is made resilient to climate change by considering the various physical risks arising from climate change, the risks from the transition to a climate-neutral economy, and the opportunities that the green transition offers through shifts in the economy and in society as a whole.

Disclosure of climate data

The members of the Eurosystem have agreed on a common framework for climate-related disclosures for their non-monetary policy investment portfolios that follows the recommendations and guidelines of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD), the Partnership for Carbon Accounting Financials (PCAF) and the Network for Greening the Financial System (NGFS). The climate data underlying the climate metrics that are disclosed are harmonised through a common data source, for which two specialised data providers were chosen in a Eurosystem joint procurement last year.

Eesti Pank disclosed its first ever climate-related metrics for the non-monetary policy investment portfolios in 2022, establishing a baseline reference for future reporting. From 2023, Eesti Pank will make annual climate-related disclosures about its investment portfolio in line with the Eurosystem's common methodological approach and data sources. Given the current structure of the Eesti Pank investment portfolio and the need to assess the exposure of the balance sheet to the risks from climate change, Eesti Pank goes beyond the scope of the common framework for euro-denominated portfolios and discloses climate metrics for the major asset classes in the entire non-monetary policy portfolio. The current focus is on the metrics and targets category of the TCFD reporting framework, but in future years additional chapters will be added on governance, strategy and risk management.

The goal of a climate-neutral investment portfolio by 2050

A long-term goal in the Eesti Pank strategy is to have a climate-neutral non-monetary policy investment portfolio by 2050. This is in line with the decarbonisation objectives of the European Union and the goal of the Paris Agreement to limit global warming to well below two degrees Celsius above pre-industrial levels. The ability to set climate-related targets varies across different asset classes, and there are limits on the ability to set interim quantitative targets for certain portfolios.

Eesti Pank's non-monetary policy portfolio is predominantly invested in the government debt securities of the advanced economies that have the highest credit quality, as these best suit the primary investment objectives of the central bank of capital preservation and liquidity. Eesti Pank will refrain from setting intermediate quantitative climate-related targets for investment in this asset class until the appropriate climate considerations have been fully integrated into the portfolio construction framework.

The first steps have been taken towards a climate-neutral investment portfolio

The Eesti Pank equity portfolio seeks to reduce exposure to physical and transition-related climate risks while pursuing investment opportunities that arise from the transition to a low-carbon economy. The largest share of the equity portfolio was invested in 2022 in an exchange traded fund composed of underlying assets so that the resulting portfolio as a whole would follow a decarbonisation trajectory and be compatible with the objectives of the Paris Agreement.

An allocation was made in the Eesti Pank Supranational and Agency bond portfolio to the Bank of International Settlements (BIS) green bond investment fund for central banks, which finances renewable energy production and energy efficiency projects through its underlying securities. Those green bonds are certified by an external review provider and aligned with the Green Bond Principles of the International Capital Markets Association (ICMA) or the Climate Bond Standard.

Climate-neutral investment

Growing awareness about the risks from climate change, and the understanding that the transition away from fossil fuels has become a necessity and not an option, have changed how investors allocate capital and manage risk.

From the perspective of the investor, climate risk is not only the various physical or material risks from climate change, but also risks from the decades-long and economy-wide transition towards a low carbon and environmentally sustainable world. Transition risks include the timing risk of mitigation policies for climate change, the risks associated with technological breakthroughs, the stigmatisation of certain industries, stranded assets[10], and changes in business models and consumer preferences. At the same time, the global momentum towards net zero[11] emissions is on course to reshape the global economy, which will require the large-scale deployment of technological innovation across all industries and so will unlock new investment opportunities.

In the investment management context, decarbonising a portfolio means improving its climate metrics, either by the issuers of the underlying equity and debt instruments cutting their carbon emissions or by the portfolio allocations being shifted towards holdings with superior climate characteristics. Although more and more investors are setting net zero targets for their investment portfolios, there is no single best way to design a net zero strategy. The choices for such a strategy need to be considered in combination with other investment goals, such as risk-adjusted return objectives, portfolio diversification and expectations, and restrictions imposed by the investment mandate.

Institutional investors around the world are increasingly expected to disclose the climate metrics of their investment portfolios and how far they have moved towards the target of net zero emissions. Further progress is needed though in the quality of climate data, the transparency of verification mechanisms, and the universal applicability of metrics, and it is needed across all asset classes. Enhancing the reliability, consistency and comparability of the metrics will allow

10 Stranded assets are those like fossil fuels that will become valueless through remaining unused.

11 Net zero is when a balance has been achieved between the greenhouse gas emissions emitted by human activity and those absorbed or removed from the atmosphere.

better informed pricing of climate related risks, more efficient capital allocation, and improved judgement about the broader impact of investments beyond generating financial returns.

What are the climate metrics for an investment portfolio?

Climate metrics are indicators of the exposure of investment to various climate-related risks, and they most commonly use carbon as a proxy of that risk. Eesti Pank is this year disclosing the three metrics that form the basis of the Eurosystem's common minimum disclosures framework for the non-monetary policy portfolios of the national central banks.

The central element of the climate-related disclosures is weighted average carbon intensity (WACI), which normalises the carbon emissions of the underlying investments in the portfolio in tonnes of CO_2e[12] by revenues for corporate issuers, and by GDP, population or government expenditure for sovereign and public sector issuers. The WACI reflects the carbon efficiency of a portfolio and allows its exposure to carbon-intensive issuers to be evaluated. Companies with high carbon emissions but low revenues are likely to be more vulnerable to any carbon pricing mechanisms and so they are more exposed to transition risks.

The absolute emissions metric in tonnes of CO_2e is attributed to an investment portfolio by apportioning the emissions of an entity from an ownership ratio or financing share. As an absolute measure it scales with portfolio size and so responds not only to changes in emissions but also to changes in portfolio size. This metric should reflect any effect that the investment strategies built on intensity metrics have on overall carbon emission reductions.

The carbon footprint metric shows the carbon emissions in tonnes of CO_2e for each million euros invested, and so allows portfolios of different sizes to be compared. The formulas for calculating the metric are given at the end of this chapter.

Future disclosures by the central bank will go beyond carbon exposure metrics based on historical emissions data and will complement the backward-looking absolute and relative emissions and carbon intensity metrics with forward-looking ones that will allow estimates of the potential financial impact of climate-related risks and the alignment of the portfolio with the pathway of long-term climate neutrality.

Climate metrics for the Eesti Pank investment portfolio 2021-2022

The climate indicators for the Eesti Pank non-monetary policy portfolios for the end of 2021 and 2022 are summarised in Table 4. As emissions data are usually updated with a lag, any dynamics in the absolute emissions attributed to the sovereign bond portfolio in the table are entirely due to the change in portfolio size, as the underlying emissions data for both years are the latest currently available, which are from 2020. The WACI metric reflects the macroeconomic data for 2021.

The emissions data are for 2021 for the other two asset classes. As 2021 has been set as the baseline for the investment portfolio's decarbonisation, any dynamic in the underlying absolute emissions data will not become evident until later disclosure

12 The term "carbon" is used for all the greenhouse gases covered by the Kyoto protocol, and CO_2e is a metric that is calculated by converting amounts of other gases to the equivalent amount of carbon dioxide in terms of their global warming impact.

Table 4. Climate indicators for the Eesti Pank non-monetary policy investment portfolio

	Sovereign bonds*				Non-sovereign bonds			
	production-based CO_2	consumption-based CO_2	public sector-based CO_2		total	supranational and agency bonds	equities	other
Size of the portfolio, million euros								
2022		1137			454	170	179	105
2021		1066			445	171	172	102
WACI (t CO_2e)								
2022	327	19	242	CO_2 scope 1+2	73	6	67	
				scope 1+2+3	1231	333	898	
data coverage	(100%)	(100%)	(100%)		(84%)	(58%)	(100%)	
2021	322	18	242	CO_2 scope 1+2	158	4	154	
				scope 1+2+3	1413	333	1080	
data coverage	(100%)	(100%)	(100%)			(100%)	(100%)	
Total carbon emissions (t CO_2e)								
2022	471 527	512 725	57 293	CO_2 scope 1+2	9696	181	9515	
				scope 1+2+3	97 288	1948	95 340	
data coverage	(100%)	(100%)	(100%)		(84%)	(58%)	(100%)	
2021	401 544	435 599	48 270	CO_2 scope 1+2	13 171	16	13 155	
				scope 1+2+3	100 901	1731	99 170	
data coverage	(100%)	(100%)	(100%)			(100%)	(100%)	
Carbon footprint (t CO_2e / million euros invested)								
2022	389	423	47	CO_2 scope 1+2	56	2	54	
				scope 1+2+3	560	19	541	
data coverage	(100%)	(100%)	(100%)		84%	(58%)	(100%)	
2021	389	422	47	CO_2 scope 1+2	76	<1	76	
				scope 1+2+3	583	10	573	
data coverage	(100%)	(100%)	(100%)			(100%)	(100%)	

Sources: ISS, C4F, World Bank
* Sovereign bonds from the USA, the United Kingdom, Canada and Australia
Note. WACI is weighted average carbon intensity as t CO_2e per million euros of company sales revenue, national GDP or public sector consumption expenditure, or per capita. Scope 1 emissions are the actual emissions of companies or organisations; scope 2 covers all indirect emissions resulting from electricity consumption; scope 3 emissions also includes all other indirect emissions arising from value and supply chains. Data coverage indicates the availability of data as the percentage of investments for which all the required emissions and financial data are available.

reports. Nevertheless, there has been a substantial reduction in the weighted average carbon intensity metric for the equity portfolio, which reflects the investment in a Paris Agreement Aligned exchange traded fund in 2022.

Granularity is added to the disclosure by including scope 3 emissions[13] for the equity and supranational and agency portfolios. Those emissions are hard to measure and the methodologies for doing so are still evolving, but they indicate the real magnitude of the investment portfolio's exposure to climate risks, given that scope 3 emissions are nearly 90% of total emissions in several sectors. Including scope 3 emissions is also important because the long-term target of climate neutrality that the central bank has set for its portfolio covers all three scopes.

13 Scope 3 emissions are all the indirect emissions up and down the value and supply chains of a company, from the products and services it buys, to the way the products it sells are used.

Formulas for common climate-related risk metrics

Absolute emissions or total financed carbon emissions:

$$\sum_{n}^{i}\left(\frac{current\ value\ of\ investment_i}{EVIC\ or\ total\ debt_i} \times issuer's \quad GHG\ emissions_i\right),$$

EVIC is the enterprise value, including cash, of a company, defined as the sum of the market capitalisation of ordinary shares at fiscal year-end, the market capitalisation of preferred shares as at fiscal year-end, and the book values of total debt and minority interests.

GDP adjusted for Purchasing Power Parity is the sum of gross value added by all resident producers plus any product taxes and minus any subsidies not included in the value of the products. The (PPP) conversion factor is a spatial price deflator and currency converter that eliminates the effects of differences in countries' price levels.

Carbon footprint:

$$\frac{\sum_{n}^{i}\left(\frac{current\ value\ of\ investment_i}{EVIC\ or\ total\ debt_i}\right) \times issuer's \quad GHG\ emissions_i}{current\ portfolio\ value\ (€M)}$$

Weighted average carbon intensity (WACI):

$$\sum_{n}^{i}\left(\frac{current\ value\ of\ investment_i}{current\ portfolio\ value}\right) \times \left(\frac{issuer's \quad GHG\ emissions_i}{issuer's\ €M\ revenue\ or\ GDP,\ population,\ total\ consumption\ expenditure}\right)_i$$

Revenue is the total amount of income generated by the sale of goods and services related to the primary operations of the business of a company.

Total consumption expenditure is general government final consumption expenditure of a country, which includes all government current expenditures for purchases of goods and services, including compensation of employees. It also includes most expenditures on national defence and security, but excludes government military expenditures that are part of government capital formation.

FIVE HUNDRED KROONS

1991; 1994; 1996; 2000; 2007

Designed by: Vladimir Taiger

The back of the banknote shows the barn swallow, the Estonian national bird

ORGANISATION AND DEVELOPMENT

It is a goal of Eesti Pank to have an attitude of openness and to be an efficiently run, innovative and responsible organisation. It offers its staff opportunities for improving their health and gives them modern working conditions, including flexible work and opportunities for long-term development.

EESTI PANK STAFF

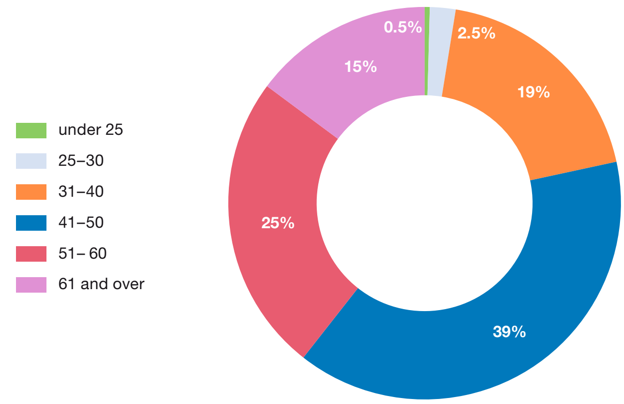
On 31 December 2022, Eesti Pank had 233 employees and three members of the Executive Board. There were seven employees with suspended contracts, three of them on maternity leave.

One employee was working at the International Monetary Fund, and three at the European Central Bank. There were 17 employees working part-time at Eesti Pank. Three interns worked at the bank during 2022.

The total staff turnover rate was 5.5% in 2022, which was a little lower than in 2021.

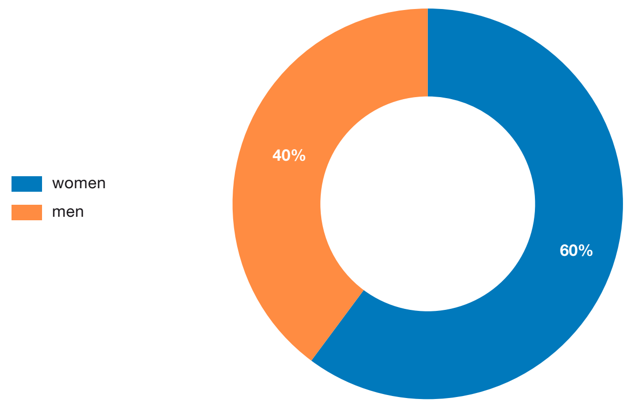
The average age of Eesti Pank employees was 48 and they have worked at the bank for 14 years on average. Women account for 60.2% of the Eesti Pank staff, and 39.8% are men. Some 85% of employees have a higher education degree and 8% have a doctorate (see Figures 18, 19 and 20).

Figure 18. Age distribution of the staff



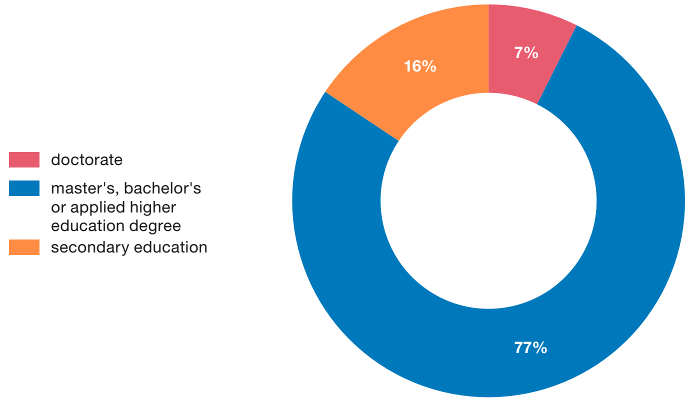
Source: Eesti Pank

Figure 19. Gender distribution of the staff



Source: Eesti Pank

Figure 20. Education distribution of the staff



Source: Eesti Pank

The staff working at Eesti Pank are dedicated

The regular employee engagement and satisfaction survey was again carried out in autumn 2022. The survey was run by Kantar Emor and was designed to assess how changes at Eesti Pank over the past two years had affected the commitment and satisfaction of the people working at Eesti Pank.

The strengths of Eesti Pank have remained unchanged, as staff consider the central bank to be an attractive employer with a good reputation where the people working are the best in their field, colleagues are educated and knowledgeable, and the working environment is friendly and cohesive. An important strength was the strategic vision of heads of department and the flow of information about decisions taken by management. The stability of the job was also highly appreciated, as was the package of benefits offered by Eesti Pank. Eesti Pank started offering health insurance for its staff in 2022.

Employees agreed that the decisions taken in their area of work support Eesti Pank in carrying out its tasks. There was also increased satisfaction that more information about management decisions reaches staff, and flexibility in the organisation of work was highly appreciated.

Eesti Pank promotes sport and culture

To improve the health and welfare of its staff, Eesti Pank has always encouraged its employees to engage in sports and in singing and dancing practice. Sporting activities at Eesti Pank have been coordinated by the bank's sports club since 1996, and the activities of the Eesti Pank choir and dance group have been run by the culture club of the bank for a decade. The sports club had 265 members at the end of 2022, 207 of whom were from Eesti Pank and 58 from Finantsinspektsioon, while the culture club had 38 members, 25 of whom were in the choir and 14 in the dance group. Joining the clubs lets members keep abreast of what activities the clubs offer, attend joint events, and represent Eesti Pank at inter-institution sporting events in Estonia or internationally against other European central banks, and in choir and dance festivals.

A full programme of joint activities was restored in 2022 after the Covid-19 pandemic. Bowling events and disc golf competitions were held in spring and autumn, and choir rehearsals, dance practice and group exercise classes restarted. Bigger events within the bank were the traditional winter and summer sporting days, and several special thematic events were also organised. Sports club members took part in several domestic competitions, while the choir joined in several events organised by the Estonian Mixed Choirs' Association. After a two-year break the sporting competitions for the central banks of Europe resumed, with the Eesti Pank team winning a truly impressive first place in basketball. The choir attended a choir festival for European central banks in Leipzig, and the dance group appeared at events in the bank.

ORGANISATIONAL DEVELOPMENT

Staff engaged more actively in training and development

The average number of days of training per employee in 2022 was 5.2, up from 4.5 days in 2021. Regular thematic seminars have clearly helped raise the number of days of training.

The Green Morning series of seminars that started in 2021 was joined by the Digital Morning series in 2022, which is designed to improve the digital skills of employees of Eesti Pank and Finantsinspektsioon and to broaden their knowledge of the world of IT.

To help its staff learn the information and skills that they need, Eesti Pank started working last year with the highly-recognised learning platform Coursera, which offers world-class training courses developed by leading universities and companies.

Eesti Pank joined the Equality, Diversity and Inclusion Charter

In summer 2022, Eesti Pank joined the Equality, Diversity and Inclusion Charter drawn up for the European System of Central Banks and the Single Supervisory Mechanism at the initiative of the European Central Bank, taking on the obligation to promote a strong working environment built on honesty and dignity that has no place in it for any form of discrimination. The bank has also previously given great priority to employee well-being, equal treatment and inclusion, but these principles will now be applied even more systematically. Eesti Pank has reviewed its current practices and started raising awareness among employees.

Eesti Pank's values reflect changes in the environment

Eesti Pank updated its values as an organisation to reflect the changing environment and new forms of work, and to function more smoothly as an organisation. All of the bank's staff were involved in agreeing on the following values:

- I stick to what is agreed, I trust my colleagues, I offer and ask for help
- I work to get the best results, I keep on top of my profession, I apply what I learn.
- I strive for common goals; I consider how my actions affect my colleagues, the organisation and the environment.
- I try new solutions, I adapt and I dare to be wrong.

Remote work has become part of the regular organisation of work

The pandemic restrictions forced the employees of Eesti Pank to work outside the rooms of the bank, and it has now been agreed to allow them to continue doing so. The use of remote work depends on the particular unit and tasks of the individual, but in order to ensure the quality of work even when people are physically separated, more attention than before has been paid to describing clearly goals and expected results, metrics, and common values. Remote work has also given an impetus to updating the overall concept for the use of space in the Eesti Pank buildings.

The Eesti Pank strategy was reviewed

The annual review of strategy shortened the Eesti Pank mission statement substantially, leaving only what is most important for what society expects. Eesti Pank as a central bank of the euro area contributes to the sustainable development of the Estonian economy and to increased prosperity by keeping inflation moderate, the financial sector stable, and cash circulation functioning.

Changes in the economic climate also provoked a review of the description of Eesti Pank's main tasks. The strategy defines the core tasks and development goals of the central bank for the next five years.

Greater focus than before will be placed in economic policy on promoting public discussion of economic policy. Eesti Pank is ready to do this by providing discussion platforms for experts even on topics that are only indirectly related to the core work of the bank but that are important for the economic development of Estonia. Eesti Pank plans to start using a microdata basis that combines different registers and databases so that it may give better advice.

Readiness to act in an emergency

The ability of Eesti Pank and other financial market participants to carry out their core duties in the event of a crisis has become ever more important. Russia's invasion of Ukraine brought into sharp focus the need to be better prepared for even the most extreme circumstances. This applies to organising the vital services of payment services and cash circulation in a crisis, providing liquidity assistance in the event of a banking crisis, and ensuring the financial independence and credibility of the central bank itself. Continuity exercises were organised for cash circulation and payment services in 2022 to test readiness.

Continuity management is a part of the bank's risk management system. Its purpose is to ensure the operation of the central bank in such a way that it can do its work and achieve its objectives without disruption and that the impact of any crisis on the bank would be minimal. Active steps were taken in 2022 to increase the readiness of the central bank and of the commercial banks and other partners to cope with a civil crisis or a national security emergency.

Particular attention was paid to increasing the cyber resilience of Eesti Pank to make sure that the central bank could function sustainably even under cyber attack. Wherever possible, cloud-based services are preferred.

EESTI PANK'S EFFORTS FOR THE CLIMATE

One goal of Eesti Pank is to reduce the environmental impact of the bank's activities

Eesti Pank continued in 2022 to integrate the climate, sustainable development and social responsibility into the everyday work of the central bank. The central bank analyses and publishes the impact that changes and risks arising from climate change and climate policy objectives have on the economic environment, financial stability, financial sector legislation, the financing and competitiveness of the economy, and monetary policy and the investment of reserves.

Two goals were set in 2021 to be achieved in 2022, which were to measure the carbon footprint of the organisation and to qualify for a green office certification for environmental sustainability. Eesti Pank and Finantsinspektsioon, which shares the same buildings, consequently assessed the carbon footprints of both organisations for the first time, using data from 2020. The Executive Board of Eesti Pank approved a long-term environmental action plan for the organisation. The Eesti Pank buildings received a green office certification in October, and in December the Estonian Association for Environmental Management awarded Eesti Pank and Finantsinspektsioon the title of best green office of the year 2022.

The Executive Board confirmed the climate and sustainability activities for Eesti Pank in September 2022 and they were published in the strategic development tasks for 2023-2027. The goal is to reach a point where Eesti Pank is an organisation that prioritises the principles of sustainable development. The main action areas for approaching sustainability:

1. Every member of staff at Eesti Pank is aware of climate and environmental topics, at least as far as these affect their work. Regular seminars on environmental topics for staff of Eesti Pank and Finantsinspektsioon by external speakers continued throughout 2022. Training for employees on environmental and climate topics was greatly increased, and an online course in environmental economics was run for economists.

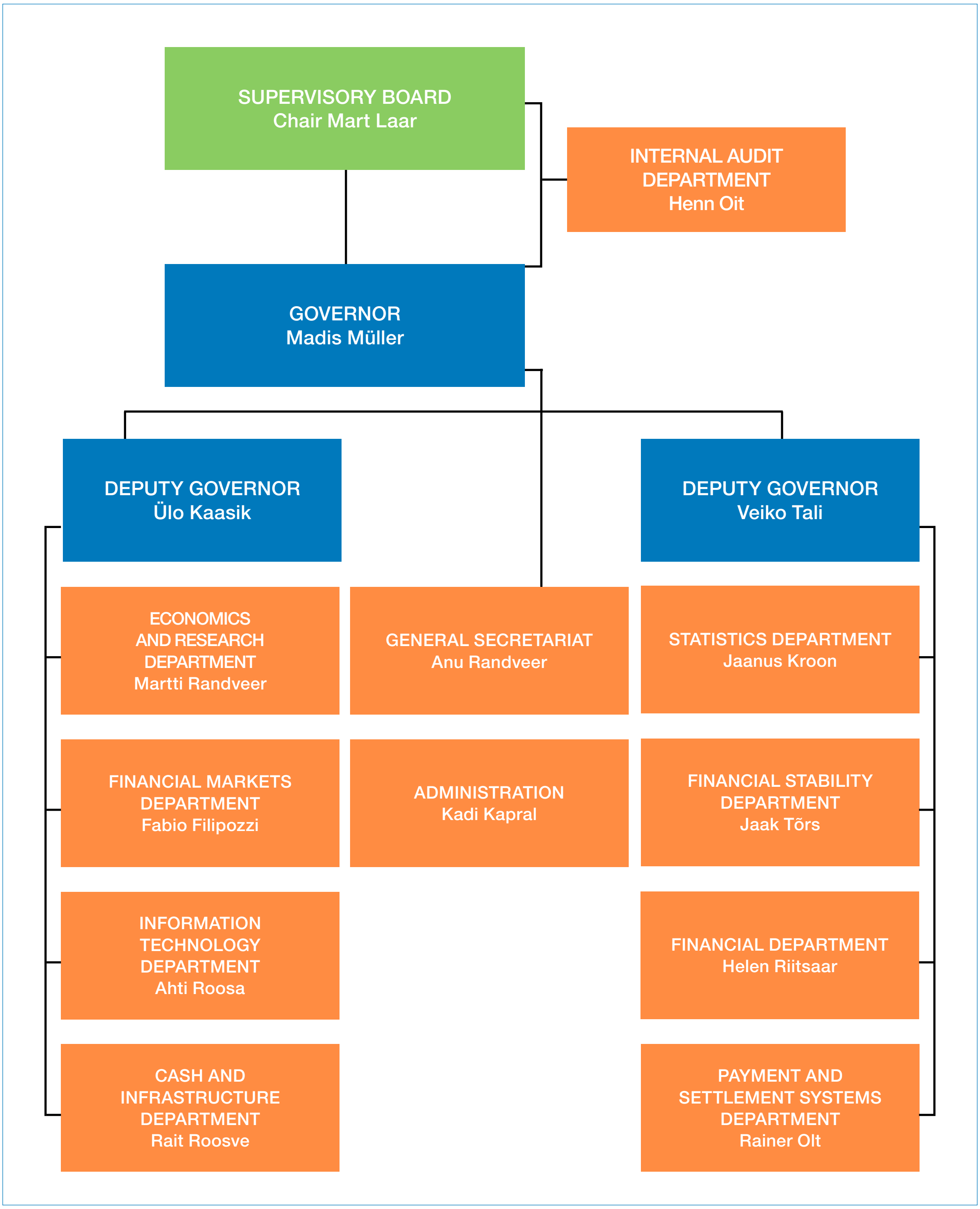
2. Eesti Pank applies the green office principles and sets target for achieving compliance with the green office medium level. Eesti Pank completed the green office assessment in October 2022 and at the end of the year the Executive Board approved the establishment of a permanent green office working group. The next level of the green office affects almost all of the activities of the central bank, and the working group will have to involve various in-house experts at different stages. Waste handling at Eesti Pank and Finantsinspektsioon was reorganised at the start of 2022 and internal communication about it was increased.

3. Eesti Pank is consistently reducing the carbon footprint of its own activities following its environmental action plan. Eesti Pank and Finantsinspektsioon employed the assistance of Sustinere as an external assessor to measure the carbon footprint of the organisations using the internationally recognised Greenhouse Gas Protocol for 2020. The results of the assessment allowed the central bank to draw up an environmental action plan that focuses on reducing energy consumption, increasing energy efficiency, and introducing renewable energy sources or energy sources with a smaller environmental impact. Reducing the footprint of supply chains needs a review of the principles of several areas such as procurements and organisation of events, and the introduction of new and more stringent principles.

4. Eesti Pank has helped to increase the recirculation of coins. One and two-cent coins are little used and there is a high environmental impact from producing them, and so the goal is to recirculate as many of the coins issued as possible. Producing and transporting the coins makes up a large part of Eesti Pank's carbon footprint. Consumers should be reminded that recirculating the coins as a means of payment is also effective, and so the bank increased its public communication about coins in 2022. The need to produce one and two-cent coins would also be reduced if rounding rules were introduced for final prices, and Eesti Pank has proposed a draft law on this to the government for consideration. The government did not however take up the topic in 2022.

5. Eesti Pank is adjusting its investments to reach climate neutrality in the investment portfolio by 2050. Management of the investment portfolio of the central bank follows the principles of sustainable and responsible investing, which recognise the risks and investment opportunities from climate change and the carbon footprint of investments, setting a target of achieving climate neutrality in the investment portfolio by 2050. More information on the climate measures taken by Eesti Pank in its investments can be found in the chapter on reserve management, which explains how the central bank has already started analysing climate indicators.

Eesti Pank Organisation Chart 2022



ANNUAL ACCOUNTS OF EESTI PANK FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022

THE FINANCIAL POSITION OF EESTI PANK

CAPITAL AND RESERVES

Eesti Pank had EUR 485.8 million of capital as at 31 December 2022. More detailed information on Eesti Pank's capital and reserves can be found under Item 31 "Capital and Reserves" in the notes on the Balance Sheet.

PROVISION FOR FINANCIAL RISKS

Following from risk assessments, Eesti Pank has made a provision for financial risks since 2012. The size of the provision and the continuing need for it is reassessed each year, with various factors considered. The risk assessment is based on a calculation of the value at risk of risk-bearing assets, which takes into account the size of the risk-bearing assets, the extent of risks that have realised during the year, and the forecast for the year to come. As at 31 December 2021 the provision made to cover financial risks was EUR 103.6 million. The Executive Board decided to use EUR 100 million from the provision to cover financial risks to cover the loss made in 2022, and the provision was reduced to EUR 3.6 million as at 31 December 2022. See also Item 29 "Provisions" in the notes on the Balance Sheet.

PROVISION FOR THE OBLIGATION TO EXCHANGE ESTONIAN KROONS FOR EUROS

Twelve years have passed since the euro was introduced and there are still some EUR 43.8 million of Estonian kroons that have not been returned from circulation. It is highly probable that not all the kroons that were issued will be exchanged for euros in the future, as some will have been destroyed and some retained as souvenirs. For this reason a special purpose provision of EUR 29.6 million was set up in 2016. Future exchanges of kroons for euros will be funded from the provision. The provision was reduced in 2022 by EUR 235,892 (EUR 230,929 in 2021) as kroons were returned, and consequently the provision for the obligation to exchange kroons was reduced to EUR 27.7 million.

REVALUATION ACCOUNTS

Unrealised profit from gold, foreign currency and securities is not recorded as income in the Profit and Loss Account and is transferred to the revaluation accounts in the liabilities side of the Eesti Pank Balance Sheet. Assets on these accounts are used to reduce any future impact on the financial results of the bank from unfavourable developments in prices or exchange rates. In this way such financial buffers can help strengthen the resilience of the bank to underlying risks. The total value of the revaluation accounts for gold, currency and securities was EUR 20.2 million at the end of December 2022 and EUR 77.8 million at the end of 2021. For more details, see the notes on accounting principles, and Item 30 "Revaluation accounts" in the notes on the Balance Sheet.

FINANCIAL RESULTS FOR 2022

Eesti Pank's net profit in 2022 was EUR 0 million, and it was EUR 3.7 million in 2021.

Net interest income fell to EUR 0.8 million in 2022 from EUR 27.9 million in 2021. The return on the investment portfolio was negative in 2022. The sharp rise in core interest rates caused historically large losses for bond investors, and the general uncertainty caused equity prices to fall. The fall in the market value of securities led to write-downs of securities of EUR 99.3 million in 2022; write-downs in 2021 were EUR 10.4 million. The net result for Eesti Pank of the distribution of monetary income in 2022 was EUR 30.5 million; in 2021 it was a loss of EUR 12.7 million. Income from equity shares and participating interest was EUR 4.6 million in 2022, which included EUR 3.5 million of dividends from equity funds, and it was EUR 5 million in 2021 with EUR 3.4 million of dividends. For more details, see Item 35 "Income from equity shares and participating interests" in the notes on the Profit and Loss Account.

The total operating expenses of Eesti Pank, including depreciation, increased from EUR 21.2 million in 2021 to EUR 25 million in 2022. The largest expenses were on staff costs and information and communications technology.

RISKS

Eesti Pank has a risk management system that covers all the processes of the bank and allows various risks to be handled in a single framework. Risk management aims to reduce the adverse effect that unforeseen events can have on the achievement of the bank's objectives. To this end, risk management is integrated with the investment, planning, budgeting and management reporting processes.

Reporting and analysis of risks show that risks arising from the external environment have increased. Contingency plans for services are used to reduce the impact of any possible interruption to processes the bank considers critical and to ensure the continuity of activity. The external auditors regularly assess the risk management of the bank.

Eesti Pank's continued high financial risks arise mainly from the large size of the balance sheet following the purchases of securities under the asset purchase programme and the pandemic emergency purchase programme, and from the high degree of volatility in financial markets.

The financial risks at Eesti Pank are assessed using both Value at Risk (VaR) and Expected Shortfall measures. The need to use multiple measures of risk was caused by the large increase in the Balance Sheet and the risks stemming from changes.

Eesti Pank's reserves are exposed to various risks such as market, credit and liquidity risks. Risks are managed constantly, with various risk limits set on investments and precautionary measures employed like the four-eyes principle and separation between decision-making and control functions.

Investment risk not related to monetary policy is measured where possible by the risk variable VaR (Value at Risk). The benchmark portfolio is approved by the Executive Board of Eesti Pank and sets the overall risk tolerance of Eesti Pank's investments. The benchmark portfolio currently contains securities, government-guaranteed mortgage-backed securities, and equity fund units. The Executive Board also decides the acceptable level of foreign exchange risk for the benchmark portfolio. The foreign exchange risk of the securities portfolio is partially hedged with forward transactions for foreign currency. Risks that are not measured by VaR are limited by their amount or by other parameters. Counterparty risk is managed through various contracts. The list of financial instruments that are permitted for managing investment assets is approved by the Governor of Eesti Pank. The risk management division observes that the risks remain within their permitted limits.

In addition to the risks from reserve management, the assets of Eesti Pank are subject to risks from monetary policy transactions. Risks related to monetary policy transactions are managed jointly in the Eurosystem Risk Management Committee, which comprises representatives of the central banks of the euro area, including Eesti Pank. A risk framework has been established that sets out conditions of transaction counterparties, assets that qualify as collateral for monetary policy operations, financial instruments to be purchased within the purchase programmes, and similar. Under Article 32.4 of the Statute of the ESCB, the Eurosystem central banks share any losses realised from securities bought in monetary policy operations or held under the Securities Market Programme and the expanded Asset Purchase Programme other than government bonds, in full in proportion to the prevailing ECB capital key shares[14].

14 Under Article 29 of the Statute of the ESCB and of the ECB, the central banks of the member states subscribe the capital of the European Central Bank in the proportions given by the capital key. The capital key is calculated by looking equally at each country's share of the European Union's population and GDP. The weightings are adjusted every five years or when the group of central banks of the countries in the ESCB changes. As the member states that are outside the euro area do not have a right to the distributed profit and loss of the European Central Bank under the capital key, Eesti Pank's share of the risks of the European Central Bank has been 0.2817% since 1 February 2020.

APPROVAL OF THE ANNUAL ACCOUNTS FOR THE FINANCIAL YEAR ENDED 31 DECEMBER 2022 BY THE EXECUTIVE BOARD OF EESTI PANK

The Executive Board recognises its responsibility for the Annual Accounts of Eesti Pank for the financial year ended 31 December 2022.

The Annual Accounts of Eesti Pank have been drawn up in accordance with the rules based on Article 26.4 of the Statute of the European System of Central Banks and of the European Central Bank, in line with the guideline of the European Central Bank of 3 November 2016 on the legal framework for accounting and financial reporting in the European System of Central Banks (ECB/2016/34) (recast)[15] and the Eesti Pank Act. The parts of the Annual Accounts that are not regulated by ECB guidelines have been drawn up in accordance with the financial reporting standards generally accepted in Estonia. The Annual Accounts give a true and fair view of the assets and liabilities, equity and financial performance of Eesti Pank.

The preparation of the Annual Accounts in conformity with the above requirements requires the Executive Board to provide estimates of the determinants affecting the assets and liabilities of Eesti Pank as at the accounting date and income and expenses during the accounting period. These estimates are based on the information available about Eesti Pank, its intentions and risks as at the date of preparation of the Annual Accounts. The final outcome of the economic transactions reflected in the Annual Accounts may differ from the estimates of the Executive Board.

On 15 March 2023, all the members of the Executive Board of Eesti Pank on that day signed the Annual Accounts digitally.

Madis Müller	Governor of Eesti Pank, Chairman of the Executive Board
Ülo Kaasik	Deputy Governor of Eesti Pank, Member of the Executive Board
Veiko Tali	Deputy Governor of Eesti Pank, Member of the Executive Board

15 Decision of the ECB of 3 November 2016 on the legal framework for accounting and financial reporting in the European System of Central Banks (recast)(ECB/2016/34), OJ L 347, 20.12.2016, p37.

BALANCE SHEET AS AT 31 DECEMBER 2022

thousand euros

	Item	31.12.2022	31.12.2021
ASSETS			
Gold and gold receivables	**1**	14 075	13 278
Claims on non-euro area residents denominated in foreign currency		2 059 880	2 014 373
Receivables from the IMF	**2**	448 313	393 239
Balances with banks, securities investments and other external assets	**3**	1 611 567	1 621 134
Claims on euro area residents denominated in foreign currency	**4**	179 144	60 051
Claims on non-euro area residents denominated in euro	**5**	170 026	0
Lending to euro area credit institutions related to monetary policy operations denominated in euro	**6**	150 000	1 881 500
Other claims on euro area credit institutions denominated in euro	**7**	272	185
Securities of euro area residents denominated in euro		10 987 780	9 932 185
Securities held for monetary policy purposes	**8**	10 987 780	9 932 185
Intra-Eurosystem claims		1 213 844	2 044 749
Participating interest in the European Central Bank	**9**	95 252	93 534
Claims equivalent to the transfer of foreign reserves	**10**	113 648	113 648
Net claims related to the allocation of euro banknotes within the Eurosystem	**11**	1 004 944	1 294 651
Other claims within the Eurosystem (net)	**12**	0	542 916
Other assets		122 319	106 399
Tangible and intangible fixed assets	**13**	14 004	14 706
Other financial assets	**14**	234	234
Off-balance-sheet instruments revaluation differences	**15**	145	66
Accruals and prepaid expenses	**16**	70 941	48 020
Sundry	**17**	36 995	43 372
TOTAL ASSETS		**14 897 341**	**16 052 720**

Note: The totals in the balance sheet and in the tables included in the notes may not add up due to rounding.

The notes on pages 88-109 form an integral part of the Annual Accounts.

thousand euros

	Item	31.12.2022	31.12.2021
LIABILITIES			
Banknotes in circulation	**18**	4 071 565	3 999 960
Liabilities to euro area credit institutions related to monetary policy operations denominated in euro		7 429 207	9 651 603
Current accounts (covering the minimum reserve system)	**19**	487 221	9 651 603
Deposit facility	**20**	6 941 986	0
Other liabilities to euro area credit institutions denominated in euro	**21**	85 005	75 807
Liabilities to other euro area residents denominated in euro	**22**	477 632	1 035 606
General government		454 712	1 013 135
Other liabilities		22 920	22 471
Liabilities to non-euro area residents denominated in euro	**23**	25	24
Liabilities to euro area residents denominated in foreign currency	**24**	274 965	86 817
Counterpart of the special drawing rights allocated by the IMF	**25**	369 808	365 140
Intra-Eurosystem liabilities		1 516 299	0
Other liabilities within the Eurosystem (net)	**26**	1 516 299	0
Other liabilities		135 593	141 756
Off-balance-sheet instruments revaluation differences	**15**	7 228	28 542
Accruals and income collected in advance	**27**	34 626	39 844
Sundry	**28**	93 739	73 370
Provisions	**29**	31 258	131 510
Revaluation accounts	**30**	20 224	77 817
Capital and reserves	**31**	485 759	482 997
Capital		271 445	268 683
Reserves		214 314	214 314
Profit for the year		0	3 682
TOTAL LIABILITIES		**14 897 341**	**16 052 720**

Note: The totals in the balance sheet and in the tables included in the notes may not add up due to rounding.

The notes on pages 88-109 form an integral part of the Annual Accounts.

PROFIT AND LOSS ACCOUNT FOR THE YEAR 2022

thousand euros

	Item	2022	2021
Interest income		303 106	180 851
Interest expenses		-302 312	-152 949
Net interest income	**32**	**794**	**27 902**
Realised gain arising from financial operations		-13 908	23 600
Write-downs on financial assets		-99 991	-10 414
Provision for financial risks	**29**	100 016	-11 000
Net result of financial operations, write-downs and risk provisions	**33**	**-13 883**	**2 187**
Fees and commissions income		643	368
Fees and commissions expenses		-59	-7
Net income from fees and commissions	**34**	**584**	**361**
Income from equity shares and participating interests	**35**	**4 553**	**5 039**
Net result of pooling of monetary income	**36**	**30 463**	**-12 705**
Other income	**37**	**2 471**	**2 125**
Total net income		**24 981**	**24 908**
Staff costs	**38**	-12 346	-11 337
Administrative expenses	**39**	-7 292	-5 777
Depreciation of tangible and intangible fixed assets	**13**	-1 775	-1 753
Banknote production services	**40**	-939	-1 005
Other operating expenses	**41**	-2 629	-1 354
Operating expenses		**-24 981**	**-21 226**
Profit for the year		**0**	**3 682**

Note: The totals in the profit and loss account and in the tables included in the notes may not add up due to rounding.

The notes on pages 88-109 form an integral part of the Annual Accounts.

NOTES ON THE ANNUAL ACCOUNTS OF EESTI PANK

ACCOUNTING POLICIES USED IN THE ANNUAL ACCOUNTS

GENERAL PRINCIPLES

The Annual Accounts of Eesti Pank have been drawn up in accordance with the rules based on Article 26.4 of the Statute of the European System of Central Banks and of the European Central Bank, in line with the guideline of the European Central Bank of 3 November 2016 on the legal framework for accounting and financial reporting in the European System of Central Banks (ECB/2016/34) (recast)[16] and the Eesti Pank Act. The parts of the Annual Accounts that are not regulated by ECB guidelines have been drawn up in accordance with the financial reporting standards generally accepted in Estonia. The Estonian Financial Reporting Standard is a set of requirements for public financial reporting based on internationally accepted accounting and reporting principles, the core of which are established by the Accounting Act of the Republic of Estonia and supplemented by the guidelines of the Estonian Accounting Standards Board.

The preparation of the Annual Accounts requires the Executive Board to provide estimates of the determinants affecting the assets and liabilities of Eesti Pank and income and expenses during the accounting period as at the balance sheet date. These estimates are based on the information available about Eesti Pank and its intentions and risks as at the date of preparation of the Annual Accounts.

No Cash Flow Statement is presented as it does not provide significant relevant information to the readers of the Annual Accounts of Eesti Pank, given the bank's role as the central bank.

The Annual Accounts have been prepared in thousands of euros unless indicated otherwise.

The Balance Sheet items are grouped by residency (euro area, non-euro area) and currency (euro, other currency). The assets and liabilities related to monetary policy are recorded on separate rows.

The Annual Accounts have been prepared on the historical cost basis, except in cases explained in the following accounting principles.

ASSETS AND LIABILITIES

Assets and liabilities are recognised in the Balance Sheet when it is probable that any associated future economic benefit will flow to or from Eesti Pank; almost all of the risks and rewards related to assets and liabilities have been transferred; and the cost or value of an asset or a liability and the resulting gains or losses can be measured reliably.

FINANCIAL ASSETS AND LIABILITIES

A financial asset is any asset that is cash, or a contractual right to receive cash or any other financial assets from another entity, or a contractual right to exchange financial assets with another entity under conditions that are potentially favourable. A financial liability is any liability that is a legal obligation to deliver cash or any other financial assets to another entity or to exchange financial assets with another entity under conditions that are potentially unfavourable.

Financial assets are initially recorded at their acquisition cost, which is the fair value of the amount paid for the financial asset in question. Financial liabilities are initially recorded at their acquisition cost, which is the fair value of the amount received for the financial liability in question. Subsequent measurement of financial assets and liabilities is based on the market value, the acquisition cost or the amortised cost depending on the type of the asset or liability. Market value is the amount for which an asset could be exchanged, or a liability settled between knowledgeable, disinterested and willing parties in an arm's length transaction. Financial assets recorded at market value are revalued on every balance sheet date.

Financial assets recorded at adjusted acquisition cost are written down if the recoverable amount of an asset is likely to be smaller than its carrying amount. The impairment of significant financial assets is measured for each object separately. The impairment of financial assets that are not individually significant and that are not expected to be impaired is measured for all assets together. Write-downs of financial assets are recorded as an expense of the accounting period in the Profit and Loss Account.

16 Decision of the ECB of 3 November 2016 on the legal framework for accounting and financial reporting in the European System of Central Banks (recast)(ECB/2016/34), OJ L 347, 20.12.2016, p37.

RECORDING OF TRANSACTIONS IN FOREIGN CURRENCY

With the exception of spot transactions in securities, transactions in financial instruments denominated in foreign currency are recorded in off-balance-sheet accounts on the trade date. On the settlement date, off-balance-sheet entries are reversed and transactions are recorded on the Balance Sheet. The purchase and sale of foreign currency affect the net foreign currency position on the trade date; realised results arising from sales are also calculated on the trade date. The interest accrued on financial instruments denominated in foreign currency and the premiums or discounts are calculated and recorded on a daily basis. These amounts also affect the foreign currency position on a daily basis.

Assets and liabilities denominated in foreign currencies are converted to euros at the official daily fixing of the European Central Bank effective on the balance sheet date. Income and expenses are converted at the official European Central Bank exchange rate prevailing on the trade date. The revaluation of on-balance-sheet and off-balance-sheet instruments and of foreign exchange assets and liabilities is performed on a currency-by-currency basis.

The special drawing right (SDR) of the International Monetary Fund (IMF) is defined in terms of a basket of currencies. To revalue Eesti Pank's holdings of SDRs, the value of the SDR was calculated as the weighted sum of the exchange rates of five currencies (the US dollar, the euro, the Japanese yen, the pound sterling and the Chinese renminbi) converted into euros as at 30 December 2022.

The official daily fixings applied on 31 December 2022 and 2021 were as follows:

	31.12.2022	**31.12.2021**
USD	1.0666	1.1326
GBP	0.88693	0.84028
JPY	140.66	130.38
CNY	7.3582	7.1947
SDR	0.798913	0.809127

GOLD

Gold is valued at the market price prevailing at the year-end, and no distinction is made between the price and currency revaluation differences for gold. Instead, a single gold valuation is accounted for on the basis of the price in euros per fine ounce of gold, which, for the year ending 31 December 2022, was derived from the exchange rate of the euro against the US dollar on 30 December 2022.

SECURITIES

Securities held for monetary policy purposes

Securities held for monetary policy purposes are accounted for at amortised cost subject to impairment.

Other securities

Marketable securities (other than securities held for monetary policy purposes) 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 the year ending 31 December 2022, mid-market prices on 30 December 2022 were used.

INCOME RECOGNITION

Income and expenses are recorded in the Profit and Loss Account during the accounting period on an accrual basis regardless of when cash was received or paid. Realised gains and losses arising from the sale of foreign exchange, gold and securities are calculated from the average prices of each asset taken to the Profit and Loss Account.

Unrealised gains are not taken to the Profit and Loss Account, but are recognised on the Balance Sheet under "Revaluation accounts".

Unrealised losses are recorded in the Profit and Loss Account under "Write-downs on financial assets" if, at the year-end, they exceed previous revaluation gains registered in the corresponding revaluation account. Unrealised losses on any one currency or security or on gold are not netted against unrealised gains on other currencies or securities or gold. In the event of an unrealised loss on any currency or security or on gold at the year-end, the average cost of that item is reduced to the year-end exchange rate or market price.

Premiums or discounts arising on purchased securities are recorded as part of interest income and are amortised on a daily basis over the remaining life of the securities.

The interest income and expenses from monetary policy operations are presented on a net basis for each balance sheet item or sub-item.

REVERSE TRANSACTIONS

Repurchase transactions (sale/repurchase transactions) are recorded as collateralised loans taken at their fair value, meaning securities are recorded as assets on the Balance Sheet and the repurchase amount as a liability.

Reverse repurchase transactions (purchase/resale transactions) are recorded as collateralised loans. Securities used as collateral for reverse repurchase transactions are not recorded on the Balance Sheet of Eesti Pank.

INVESTMENTS IN SHARES

Investment in shares is recorded at market value if it can be assessed reliably. The assessment of the market value of shares is not reliable if they are not actively traded and there are no alternative methods for assessing their value reliably. In this case shares are recorded at their acquisition cost subject to impairment. Profits and losses on the sale of shares are recorded in the Profit and Loss Account after all conditions of sale have been fulfilled. Dividend income is recorded as income for the period.

FIXED ASSETS

Fixed assets are assets with a useful life over a year and an acquisition cost in excess of EUR 10 000. Fixed assets are recorded at their acquisition cost, which is the purchase price and other expenditure directly related to bringing assets to the location and condition necessary for their intended use. Land, buildings, utility systems of buildings, IT hardware, software, and other assets with long-term useful lives are recorded as fixed assets on the Balance Sheet. Prepayments for fixed assets are also recorded as fixed assets.

Land and objects of art and culture are not depreciable assets. Other fixed assets are depreciated on a straight-line basis over the estimated useful lives of the assets at the following rates.

	2022
Land and buildings	3%
Utility systems of buildings	10%
Hardware	20%
Software, motor vehicles	15–50%
Other fixed assets	7–20%

The need to differentiate between software depreciation rates arose due to the introduction of application software with high acquisition cost and varying useful life.

Subsequent expenditure incurred for items of fixed assets is recognised as fixed assets when it is probable that Eesti Pank will derive future expected benefits from the asset and the cost of the asset can be measured reliably. Current maintenance and repair costs are recognised as expenses for the period.

PROVISION FOR FINANCIAL RISKS

Given the nature of the operations of the central bank, Eesti Pank may set up a provision on the balance sheet for financial risks. The management of the bank decides to increase or reduce the provision, using a reasonable estimate of the bank's exposure. The provision is used to cover the uncovered losses in revaluation accounts to the extent approved by the Executive Board. If the size of the provision is reduced because of risk estimates, the amount it is reduced by is recorded as income for the recording period.

CLAIMS AND LIABILITIES TO FINANTSINSPEKTSIOON

The Balance Sheet of Eesti Pank contains a claim on Finantsinspektsioon for services provided and acquisition of low-value assets by Eesti Pank, and a liability to Finantsinspektsioon in relation to its current account held with Eesti Pank.

OFF-BALANCE-SHEET INSTRUMENTS

Currency instruments, namely foreign exchange forward instruments, forward legs of foreign exchange swaps and other currency instruments involving an exchange of one currency for another at a future date, are included in the net foreign currency position for the purpose of calculating foreign exchange gains and losses. The difference between the spot and forward exchange rates is treated as an interest liability or receivable on an accrual basis for both purchases and sales.

Daily changes in the variation margin of open interest rate futures contracts are recorded in the Profit and Loss Account.

CONTINGENT LIABILITIES

Contingent liabilities are recorded in the Notes on the Annual Accounts and include commitments, guarantees and other liabilities which may, under certain conditions, become liabilities in the future, though the probability of their realisation is considered lower by the management of the bank than the probability of their non-realisation.

POST-BALANCE-SHEET EVENTS

Assets and liabilities are adjusted for events that occur between the balance sheet date and the date of compilation of the Annual Accounts but are related to transactions during the accounting period or earlier periods or materially affect the condition of assets and liabilities on the balance sheet date. Important post-balance-sheet events that do not affect the condition of assets and liabilities on the balance sheet date are disclosed in the Notes.

BANKNOTES IN CIRCULATION

The European Central Bank and the euro area national central banks, which together comprise the Eurosystem, issue euro banknotes[17]. 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[18].

The European Central Bank has been allocated a share of 8% of the total value of euro banknotes in circulation, and the remaining 92% has been allocated to the Eurosystem central banks according to their weightings in the capital key of the ECB. Eesti Pank's share of the total of banknotes allocated to the Eurosystem central banks is disclosed in the Balance Sheet under the liability item "Banknotes in circulation".

The difference between the value of euro banknotes allocated to each Eurosystem central bank in accordance with the banknote allocation key and the value of euro banknotes that it actually puts into circulation also gives rise to remunerated intra-Eurosystem balances. These claims or liabilities[19] are disclosed under the sub-item "Intra-Eurosystem balances: net claims/liabilities related to the allocation of euro banknotes within the Eurosystem" (see "Intra-Eurosystem balances" in the notes on accounting policies).

From the cash changeover year until five years following the cash changeover year[20] the intra-Eurosystem balances arising from the allocation of euro banknotes are adjusted in order to avoid significant changes from previous years in the relative income positions of the Eurosystem central banks. The adjustments are effected by taking into account the differences for the reference period[21] between the average value of banknotes released into circulation by the central banks of the Eurosystem countries and the average value of the banknotes that would have been allocated to them during that period under the ECB's capital key. The adjustments are reduced in annual stages until the first day of sixth year after the cash changeover year when income on banknotes is allocated fully in proportion to the Eurosystem central bank's paid-up shares in the ECB's capital. The interest income and expense on these balances is cleared through the accounts of the ECB and is disclosed under "Net interest income" in the Profit and Loss Account.

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17 Decision of the ECB of 13 December 2010 on the issue of euro banknotes (recast) (ECB/2010/29), OJ L 35, 9.2.2011, p 26.

18 Banknote allocation key – the percentages that result from taking the ECB's share in the total euro banknote issue and applying the subscribed capital key to the NCBs' share of that total.

19 Decision 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 (recast) (ECB/2016/36), OJ L 347, 20.12.2016, p 26.

20 The year of changeover to the euro is the year when euro banknotes become the legal tender of a Member State.

21 The period is 24 months long and starts 30 months before the day that the euro banknotes become the legal tender of the country in question.

COLLECTOR COINS

The nominal value of collector coins that have been issued is no longer recorded as a liability in the Balance Sheet as the probability of the coins being repurchased is very low and their value as precious metal exceeds their nominal value. Income from the sale of collector coins is recorded in the Profit and Loss Account as it is incurred.

INTERIM PROFIT DISTRIBUTION OF 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, and the ECB's income arising from securities purchased under the Securities Markets Programme (SMP), the third covered bond purchase programme (CBPP3), the asset-backed securities purchase programme (ABSPP), the public sector purchase programme (PSPP) and the pandemic emergency purchase programme (PEPP) shall be due in full to the Eurosystem central banks in the same financial year it accrues. Unless otherwise decided by the Governing Council, the European Central Bank distributes this income in January of the following year in the form of an interim distribution of profit[22]. It is distributed in full, unless the European Central Bank's net profit for the year is less than its income earned. The distributed profit may be reduced if the Governing Council decides to make transfers to the provision for financial risks. The Governing Council may also decide to charge costs incurred by the European Central Bank in connection with the issue and handling of euro banknotes against income earned on euro banknotes in circulation.

The amount distributed to the Eurosystem central banks is disclosed in the Profit and Loss Account under "Income from equity shares and participating interests".

INTRA-EUROSYSTEM BALANCES

Intra-Eurosystem claims arising from Eesti Pank's participating interest in the ECB are reported under "Participating interest in the European Central Bank". This item covers the paid-up share of national central banks in the subscribed capital of the ECB, any net amounts paid by the national central banks because of an increase in their share in the equity capital of the ECB[23] resulting from all previous adjustments of the capital key, and contributions under article 48.2 of the Statute of the ESCB in relation to the central banks of member states whose derogations have been abrogated.

Intra-Eurosystem balances arising from the transfer of foreign reserve assets to the ECB by NCBs joining the Eurosystem are denominated in euros 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 net single asset or liability under "Net claims/liabilities related to the allocation of euro banknotes within the Eurosystem" (see "Banknotes in circulation" in the notes on accounting policies).

Intra-Eurosystem balances result primarily from cross-border payments in the European Union which are settled in central bank money in euros. These transactions are for the most part initiated by private entities, meaning credit institutions, corporations and individuals. These transactions are settled in TARGET2[24] and give rise to bilateral balances in the TARGET2 accounts of EU central banks. These bilateral balances are netted out and then assigned to the ECB on a daily basis, leaving each national central bank with a net bilateral position towards the ECB. Intra-Eurosystem balances of euro area NCBs towards the ECB arising from TARGET2, and other intra-Eurosystem balances denominated in euros such as interim profit distributions to NCBs are presented in the Balance Sheet as a single net asset or liability position and disclosed under "Other claims within the Eurosystem (net)" or "Other liabilities within the Eurosystem (net)".

22 Decision of the ECB of 15 December 2014 on the interim distribution of the income of the European Central Bank (recast) (ECB/2014/57) (OJ L 53, 25.2.2015, p 24).

23 The total value of equity capital covers all the reserves of the European Central Bank, revaluation accounts and a provision equivalent to reserves, minus any loss carried forward from previous periods. If the capital key is adjusted during the financial year, the value of equity capital also includes the accumulated net profit or net loss of the European Central Bank at the date of the adjustment.

24 The Trans-European Automated Real-time Gross Settlement Express Transfer system

NOTES ON THE BALANCE SHEET

ITEM 1 – GOLD AND GOLD RECEIVABLES

Changes in the value of Eesti Pank's gold reserves are as follows:

	31.12.2022	31.12.2021
Gold (ounces)	8 250.171	8 250.171
Ounce market value (EUR)	1 706.075	1 609.483
Revaluation (thousand EUR)	6 888	6 091
Market value (thousand EUR)	**14 075**	**13 278**

ITEM 2 – RECEIVABLES FROM THE IMF

Receivables from the IMF are the SDR account in the IMF and the reserve position in the IMF

thousand euros

	31.12.2022	31.12.2021
SDR account in the IMF	371 048	319 422
Reserve position in the IMF	77 264	73 817
Participation in the IMF	305 135	301 356
IMF No.1 account	-227 870	-227 539
Total	**448 313**	**393 239**

The SDR account in the IMF

An SDR account is generated for each IMF Member State for conducting loan transactions and various other related operations. The SDR account is used to record the SDRs distributed to support the foreign reserves of IMF Member States and to increase global liquidity (see Item 25 "Counterpart of the Special Drawing Rights Allocated by the IMF").

At the end of 2021, Eesti Pank joined the voluntary trading agreement for SDRs. The first four transactions under this agreement were made in 2022 and the result was an increase of SDR 37.7 million in the SDR account. The SDR rose in value in euros because the SDR appreciated against the euro in 2022 and because of interest earned during the year (see "Recording of transactions in foreign currency" in the notes on the annual accounts).

Reserve position in the IMF

Eesti Pank represents the Republic of Estonia in the IMF. A quota has been established for each IMF member determining its participation (subscription) and voting power in the IMF. Participation in the IMF is recorded under assets on the Balance Sheet and is equal to the country's quota.

At the end of 2022 the quota of the Republic of Estonia was 243.6 million SDRs.

The reserve position in the IMF comprises the net amount of the quota and the IMF No.1 account. The size of the reserve position is affected by the participation of the Republic of Estonia in the IMF's Financial Transactions Plan (FTP). The increase in the reserve position in 2022 was due to payments in to the FTP of SDR 2 million; in 2021 SDR 5 million was paid in. Estonia has participated in the IMF's FTP since 2012. The increase in the value of the SDRs in euros also arose partly because the SDR appreciated against the euro in 2022.

ITEM 3 – BALANCES WITH BANKS, SECURITY INVESTMENTS AND OTHER EXTERNAL ASSETS

Item 3 reflects bank balances in foreign currency with credit institutions outside the euro area; equity funds and term deposits denominated in US dollars; and security investments denominated in United States, Canadian and Australian dollars, and British pounds of non-euro area residents. Eesti Pank's foreign reserves were invested mainly in US government bonds and government-guaranteed, mortgage-backed securities funds, and government bonds of Australia, Canada, and the United Kingdom. The fair value of investments is based on the prices quoted in active markets.

	thousand euros	
	31.12.2022	**31.12.2021**
Securities	1 304 225	1 239 299
Equity funds	178 678	172 083
Securities funds	104 626	101 959
Fixed-term deposits	23 439	21 985
Current accounts	598	85 809
Total	**1 611 567**	**1 621 134**

	thousand euros	
	31.12.2022	**31.12.2021**
USD	842 829	844 709
AUD	246 042	235 761
CAD	243 692	233 511
GBP	179 360	221 747
JPY	99 637	75 805
SEK	3	5
CHF	2	9 592
NZD	1	3
NOK	1	0
Total	**1 611 567**	**1 621 134**

ITEM 4 – CLAIMS ON EURO AREA RESIDENTS DENOMINATED IN FOREIGN CURRENCY

Item 4 reflects reverse repo transactions and bank balances in foreign currency with credit institutions in the euro area and investments in securities denominated in US dollars of euro area residents.

	thousand euros	
	31.12.2022	**31.12.2021**
Reverse repos	178 433	0
Current accounts	711	801
Securities	0	59 250
Total	**179 144**	**60 051**

	thousand euros	
	31.12.2022	**31.12.2021**
GBP	178 489	155
USD	396	59 528
AUD	130	130
CAD	120	228
JPY	8	9
Total	**179 144**	**60 051**

ITEM 5 – CLAIMS ON NON-EURO AREA RESIDENTS DENOMINATED IN EURO

As at 31 December 2022 this item reflected investment of EUR 170 million in bond funds; it was 0 in 2021.

ITEM 6 – LENDING TO EURO AREA CREDIT INSTITUTIONS RELATED TO MONETARY POLICY OPERATIONS DENOMINATED IN EURO

As at 31 December 2022 the total Eurosystem holding of monetary policy assets amounted to EUR 1324.3 billion (EUR 1881.5 million in 2021), of which Eesti Pank held EUR 150 million of long-term refinancing transactions. Under Article 32.4 of the Statute of the ESCB, any losses from monetary policy operations, if they were to materialise, are shared in full by the Eurosystem central banks in proportion to the prevailing ECB capital key shares. Eesti Pank's share in the capital key is 0.2817%.

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 that can be accepted by NCBs at their own discretion, risk sharing has been excluded by the Governing Council of the ECB.

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 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 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 2020[25] 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 would be introduced to provide TLTRO III participants with additional opportunities to partly, or fully, repay their respective TLTRO III borrowings before their maturity. In 2022 early repayments of TLTRO-III loans of EUR 1731.5 million were made to Eesti Pank.

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 were 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.

ITEM 7 – OTHER CLAIMS ON EURO AREA CREDIT INSTITUTIONS DENOMINATED IN EURO

As at 31 December 2022 this item reflected the account balances in euros of euro area credit institutions of EUR 272,279; it was EUR 184,528 in 2021.

ITEM 8 – SECURITIES HELD FOR MONETARY POLICY PURPOSES

Item 8 reflects securities acquired by Eesti Pank within the scope of the second covered bonds purchase programme (CBPP2), the third covered bonds purchase programme (CBPP3), the public sector asset purchase programme (PSPP), and the pandemic emergency purchase programme (PEPP).

The securities purchased under the second covered bonds purchase programme (CBPP2) reached maturity during 2022, and so as at 31 December 2022 Eesti Pank had no such securities.

25 Decisions of the Governing Council of 30 April 2020 and 10 December 2020.

	Start date	End date	Decision	Universe of eligible securities[1]
Completed / Terminated programmes				
First covered bond purchase programme	July 2009	June 2010	ECB/2009/16	Covered bonds of euro area residents
Second covered bond purchase programme	November 2011	October 2012	ECB/2011/17	Covered bonds of euro area residents
Securities Markets Programme	May 2010	September 2012	ECB/2010/5	Private and public debt securities issued in the euro area
Asset purchase programme				
Third covered bond purchase programme	October 2014	active	ECB/2020/8 as amended	Covered bonds of euro area residents
Asset-backed securities purchase programme	November 2014	active	ECB/2014/45 as amended	Senior and guaranteed mezzanine tranches of asset-backed securities of euro area residents
Public sector purchase programme	March 2015	active	ECB/2020/9	Bonds issued by euro area central, regional or local government or recognised agencies and those issued by international organisations and multilateral development banks in the euro area
Corporate sector purchase programme	June 2016	active	ECB/2016/16 as amended	Bonds and commercial paper issued by non-bank corporations established in the euro area
Pandemic emergency purchase programme				
Pandemic emergency purchase programme	March 2020	active	ECB/2020/17 as amended	All asset categories eligible under the APP[2]

1) Further eligibility criteria for the specific programmes can be found in the Governing Council's decisions.
2) 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)[26] at a monthly pace of EUR 20 billion on average. In March 2022 the Governing Council decided[27] 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 decided[28] 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 PEPP[29], though at a lower pace than in the previous quarter, following the decision of the Governing Council in December 2021[30]. 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 future roll-off of the PEPP portfolio will be managed to avoid interference with the appropriate monetary policy stance.

Securities purchased under all the purchase programmes are valued on an amortised cost basis subject to impairment (see "Securities" in the notes on accounting policies). The amortised cost and market value[31] of

26 Further details on the APP can be found on the ECB's website.

27 See the press release of 10 March 2022 of the Governing Council's decisions.

28 See the press release of 9 June 2022 of the Governing Council's decisions.

29 Further details on the PEPP can be found on the ECB's website.

30 See the press release of 16 December 2021 of the Governing Council's decisions.

31 Market values are approximate and are derived from quoted market values. If no market quotation is available, the market value is calculated using the internal models of the Eurosystem.

Eesti Pank's securities, which are not recorded on the Balance Sheet or Profit and Loss Account and are presented only for the purposes of information, are:

thousand euros

	31.12.2022		31.12.2021	
	Amortised acquisition cost	**Market value**	**Amortised acquisition cost**	**Market value**
Public sector purchase programme	6 770 252	5 908 923	6 524 392	6 627 111
Pandemic emergency purchase programme	3 869 090	3 201 128	3 224 817	3 175 153
Third covered bond purchase programme	348 439	324 233	175 977	175 414
Second covered bond purchase programme	0	0	6 999	7 036
Total	**10 987 780**	**9 434 284**	**9 932 185**	**9 984 714**

The Governing Council of the ECB 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 the decision of the Governing Council taken under Article 32.4 of the ESCB Statute, losses from holdings of these purchase programmes, if they were to materialise, are shared in full by the Eurosystem NCBs, in proportion to the prevailing ECB capital key shares.

No impairment was found in the value of these securities in 2022 and the Governing Council decided that all the future cash flows can be expected to materialise.

ITEM 9 – PARTICIPATING INTEREST IN THE ECB

Item 9 reflects the participating interest of Eesti Pank in the ECB. Article 28 of the Statute of the ESCB states that the national central banks of the ESCB are the sole subscribers of the capital of the ECB. Subscriptions depend on the capital key weighting, which is set out in Article 29 of the ESCB Statute, and which is adjusted every five years or when the composition of national central banks in the ESCB changes.

For Eesti Pank this item covers i) the paid-up share in the subscribed capital of the ECB, ii) the net amounts paid by Eesti Pank because of the increase in its share in the equity capital of the ECB resulting from all previous ECB capital key adjustments, and iii) contributions under article 48.2 of the Statute of the ESCB.

The subscribed capital of the ECB is EUR 10,825 million. This remained unchanged after the Bank of England left the ESCB, and the 14.3% share of the Bank of England in the subscribed capital of the ECB was divided between the central banks of the euro area and the central banks of the other non-euro area countries.

The paid-in capital of the ECB also remained unchanged in 2020 at EUR 7659 million, as the central banks of the remaining countries had to cover the EUR 58 million paid in by the Bank of England to the capital of the ECB. The Governing Council also decided that the central banks of the countries in the euro area have to increase their shares in the ECB in full by paying in two annual instalments[32]. Eesti Pank in consequence paid in EUR 1.7 million on 29 December 2021 to increase its subscribed capital from EUR 21.4 million in 2020 to EUR 23.1 million in 2021. The second instalment of EUR 1.7 million was paid in 2022, increasing the subscribed capital of Eesti Pank from EUR 23.1 million in 2021 to EUR 24.8 million in 2022.

The subscribed and paid up capital contributions of the national central banks are as follows:

32 The result is that the paid-in capital of the ECB increased from EUR 7659 million in 2020 to EUR 8270 million in 2021, and to EUR 8880 million in 2022.

	Capital key weighting from	Subscribed capital as of	Paid-in capital as of	Paid-in capital as at
	01.02.2020	01.02.2020	27.12.2022	26.12.2022
	%	€	€	€
Nationale Bank van België / Banque Nationale de Belgique	2.9630	320 744 959	320 744 959	298 517 938
Deutsche Bundesbank	21.4394	2 320 816 566	2 320 816 566	2 159 988 350
Eesti Pank	0.2291	24 800 091	24 800 091	23 081 492
Central Bank of Ireland	1.3772	149 081 997	149 081 997	138 750 896
Bank of Greece	2.0117	217 766 667	217 766 667	202 675 847
Banco de España	9.6981	1 049 820 011	1 049 820 011	977 069 462
Banque de France	16.6108	1 798 120 274	1 798 120 274	1 673 513 927
Banca d'Italia	13.8165	1 495 637 102	1 495 637 102	1 391 992 269
Central Bank of Cyprus	0.1750	18 943 762	18 943 762	17 630 995
Latvijas Banka	0.3169	34 304 447	34 304 447	31 927 214
Lietuvos Bankas	0.4707	50 953 308	50 953 308	47 422 340
Banque centrale du Luxembourg	0.2679	29 000 194	29 000 194	26 990 535
Central Bank of Malta	0.0853	9 233 731	9 233 731	8 593 851
De Nederlandsche Bank	4.7662	515 941 487	515 941 487	480 187 714
Oesterreichische Nationalbank	2.3804	257 678 468	257 678 468	239 821 836
Banco de Portugal	1.9035	206 054 010	206 054 010	191 774 855
Banka Slovenije	0.3916	42 390 728	42 390 728	39 453 130
Národná banka Slovenska	0.9314	100 824 116	100 824 116	93 837 195
Suomen Pankki – Finlands Bank	1.4939	161 714 781	161 714 781	150 508 251
Subtotal – euro area national central banks	**81.3286**	**8 803 826 700**	**8 803 826 700**	**8 193 738 097**
Българска народна банка (Bulgarian National Bank)	0.9832	106 431 470	3 991 180	3 991 180
Česká národní banka	1.8794	203 445 183	7 629 194	7 629 194
Danmarks Nationalbank	1.7591	190 422 699	7 140 851	7 140 851
Hrvatska narodna banka	0.6595	71 390 922	2 677 160	2 677 160
Magyar Nemzeti Bank	1.5488	167 657 709	6 287 164	6 287 164
Narodowy Bank Polski	6.0335	653 126 802	24 492 255	24 492 255
Banca Naţională a României	2.8289	306 228 625	11 483 573	11 483 573
Sveriges Riksbank	2.9790	322 476 961	12 092 886	12 092 886
Subtotal – non-euro area national central banks	**18.6714**	**2 021 180 370**	**75 794 264**	**75 794 264**
Total	**100,0000**	**10 825 007 070**	**8 879 620 963**	**8 269 532 360**

When Estonia joined the euro area, Article 48.2 of the ESCB's Statute started to apply to Eesti Pank, requiring the central bank to pay a part of the reserves, revaluation accounts and risk provisions of the ECB in proportion to its share in the subscribed capital of the ECB. Eesti Pank's share of the ECB reserves, revaluation accounts and risk provisions stood at EUR 70,452,404 at the end of the year.

ITEM 10 – CLAIMS EQUIVALENT TO THE TRANSFER OF FOREIGN RESERVES

Item 10 reflects claims of Eesti Pank arising from the transfers of foreign reserves assets to the ECB when Eesti Pank joined the Eurosystem. These foreign reserves were 85% in Japanese yen and 15% in gold. The claims are denominated in euros at a value fixed at the time of their transfer. Article 30.2 of the Statute of the ESCB states that these amounts are fixed by the weighting of the national central banks in the subscribed capital of the ECB. 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.

ITEM 11 – NET CLAIMS RELATED TO THE ALLOCATION OF EURO BANKNOTES WITHIN THE EUROSYSTEM

Item 11 reflects Eesti Pank's claims towards the Eurosystem relating to the allocation of euro banknotes within the Eurosystem (see "Banknotes in circulation" and "Intra-Eurosystem balances" in the notes on accounting policies)[33]. 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.

ITEM 12 – OTHER CLAIMS WITHIN THE EUROSYSTEM (NET)

Item 12 reflects net claims arising from the TARGET2 balance, the difference between the monetary income pooled from and allocated to the Eurosystem central banks, and the ECB's interim profit distribution.

thousand euros

	31.12.2022	**31.12.2021**
TARGET2	0	554 785
Interim profit distribution of the ECB	0	423
Other claims within the Eurosystem	0	414
Monetary income reallocation	0	-12 705
Total	**0**	**542 916**

At the end of 2022 the result of those balances was a net liability, which is recorded under item 26 "Other liabilities within the Eurosystem (net)".

ITEM 13 – TANGIBLE AND INTANGIBLE FIXED ASSETS

thousand euros

Acquisition cost	**Buildings**	**Hardware**	**Software**	**Other fixed assets**	**Motor vehicles**	**Total**
Balance at the end of 2021	28 760	3 669	5 809	6 052	31	44 321
Acquisitions	233	137	180	155	0	706
Disposals	0	-66	0	-133	-21	-220
Balance at the end of 2022	**28 993**	**3 741**	**5 989**	**6 074**	**10**	**44 807**
Accumulated depreciation						
Balance at the end of 2021	18 226	2 853	4 084	5 219	31	30 413
Depreciation charge	705	441	359	270	0	1 775
Disposals	0	-66	0	-133	-21	-220
Balance at the end of 2022	**18 931**	**3 228**	**4 443**	**5 356**	**10**	**31 968**
Carrying amount						
Balance at the end of 2021	10 534	816	1 725	833	0	13 908
Balance at the end of 2022	**10 062**	**513**	**1 546**	**718**	**0**	**12 839**
Prepayments for fixed assets						
Balance at the end of 2021	0	0	798	0	0	798
Balance at the end of 2022	**137**	**0**	**1 027**	**0**	**0**	**1 165**
Total fixed assets						
Balance at the end of 2021	10 534	816	2 523	833	0	14 706
Balance at the end of 2022	**10 199**	**513**	**2 574**	**718**	**0**	**14 004**

33 In accordance with the accounting methods chosen by the Eurosystem for euro banknotes, 8% of the total value of 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 is allocated to the national central banks on a monthly basis, and the NCBs reflect their percentages of the euro banknotes in their balance sheets in proportion to their paid-up contributions to the ECB capital. In accordance with these accounting methods, the difference between the value of euro banknotes allocated to a national central bank and the amount of euro banknotes issued into circulation is recorded under Intra-Eurosystem net claims/liabilities related to the allocation of euro banknotes within the Eurosystem.

The cost of fixed assets acquired in 2022 was EUR 706,287; in 2021 it was EUR 1,176,629. Under the buildings procurement, the security system components were updated. Hardware procurement was related to the acquisition of additional backup and network equipment. The largest software procurement concerned development for the pan-European TARGET express transfer system of the European System of Central Banks and the T2S common platform for security settlements. The major part of inventory acquisition was upgrades of the banknote sorters and audio-video equipment.

ITEM 14 – OTHER FINANCIAL ASSETS

Item 14 reflects the shares in the Bank for International Settlements and SWIFT.

Eesti Pank holds 214 shares (200 voting shares) in the Bank for International Settlements at an acquisition cost of EUR 217,118, and 5 shares in SWIFT at an acquisition cost of EUR 17,150.

ITEM 15 – OFF-BALANCE-SHEET INSTRUMENTS REVALUATION DIFFERENCES

Item 15 reflects valuation changes in swap and forward transactions in foreign currency outstanding at year-end. These valuation changes are the result of the conversion of such transactions into their euro equivalents at the exchange rates prevailing on the balance sheet date, compared with the euro values resulting from the conversion of the transactions at the average cost of the respective foreign currency on that date.

ITEM 16 – ACCRUALS AND PREPAID EXPENSES

Item 16 records interest from financial instruments using the accrual principle, and various prepayments for services. It also records a claim on Finantsinspektsioon in relation to services provided by Eesti Pank and acquisition of current assets.

thousand euros

	31.12.2022	31.12.2021
Interest claims	68 044	45 227
Securities	42 093	38 712
Derivative instruments	18 376	6 042
Intra-Eurosystem balances	5 131	0
Fixed-term deposits and current accounts	2 070	473
Reverse repurchase transactions	373	0
Loans	1	0
Prepaid expenses	1 145	1 213
Claims on Finantsinspektsioon	1 126	1 434
Other claims	626	145
Total	**70 941**	**48 020**

ITEM 17 – SUNDRY ASSETS

thousand euros

	31.12.2022	31.12.2021
Foreign exchange transactions	34 719	33 029
Loans to employees of Eesti Pank	2 197	2 807
Credits related to margin calls	0	7 432
Other	79	104
Total	**36 995**	**43 372**

Housing loans secured by real estate have been granted to employees of Eesti Pank for a maximum of 30 years. The interest rate on housing loans granted before 2012 is the deposit facility interest payable to credit institutions plus the risk margin but together not more than the upper limit of the interest rate. The deposit facility rate equals the ECB deposit interest rate, which was -0.5% to 0% in 2022; in 2021 it was -0.5%. The upper limit on the interest rate is twice the interest rate on the European Central Bank's main refinancing operations. The interest rate on housing loans granted since 2012 is the six-month Euribor plus 0.5% but no more than the upper limit on the interest rate. The interest rate on housing loans granted since June 2014 is the six-month Euribor plus 1.25%. From 1 July 2015, Eesti Pank ceased providing loans to employees.

The item reflects balances related to swap and forward transactions in foreign currency outstanding at year-end (see Item 42 “Derivative instruments”). These balances arise from the conversion of such transactions into their euro equivalents at the respective currency’s average cost on the balance sheet date, compared with the euro values at which the transactions were initially recorded (see “Off-balance-sheet instruments” in the notes on accounting policies).

ITEM 18 – BANKNOTES IN CIRCULATION

Item 18 reflects Eesti Pank’s share of the total euro banknotes in circulation (see “Banknotes in circulation” in the notes on accounting policies). The value of euro banknotes actually issued by Eesti Pank is smaller than the allocation of such banknotes to Eesti Pank. The claim arising from this difference is reflected in Item 11 “Net claims related to the allocation of euro banknotes within the Eurosystem”.

thousand euros

	31.12.2022	31.12.2021
Euro banknotes	3 066 621	2 705 308
Adjustments of euro banknotes	1 359 213	1 642 690
ECB banknotes (8%)	-354 269	-348 039
Total	**4 071 565**	**3 999 960**

ITEM 19 – CURRENT ACCOUNTS (COVERING THE MINIMUM RESERVE SYSTEM)

Item 19 reflects the current accounts of credit institutions with Eesti Pank except for those funds of credit institutions that are not freely disposable, which are covered separately under liability item 21 “Other liabilities to euro area credit institutions denominated in euro”. Banks’ minimum reserve balances until 20 December 2022 were remunerated at the latest available 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.

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 six on an institution’s minimum reserve requirements[34]. The non-exempt tier of excess liquidity holdings continued to be remunerated at the lower of either zero per cent 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.

The average balance on the accounts of credit institutions was EUR 5,965,717,805 in 2022 (EUR 8,161,746,496 in 2021).

ITEM 20 – DEPOSIT FACILITY

Item 20 reflects overnight deposits placed by the banks that access the Eurosystem’s liquidity absorbing standing facility at the pre-specified rate. The deposit facility rate equals the ECB deposit interest rate, which was -0.5% to 0% in 2022; in 2021 it was -0.5%.

ITEM 21 – OTHER LIABILITIES TO EURO AREA CREDIT INSTITUTIONS DENOMINATED IN EURO

Item 21 records the funds of credit institutions that are not freely disposable.

34 The multiplier may be adjusted by the Governing Council over time in line with changing levels of excess liquidity holdings.

ITEM 22 – LIABILITIES TO OTHER EURO AREA RESIDENTS DENOMINATED IN EURO

Item 22 reflects mainly the current accounts of the Ministry of Finance, Finantsinspektsioon and the Guarantee Fund held with Eesti Pank. Interest on those accounts is calculated monthly from the daily balance of the current account using the €STR (euro short-term rate) interest rate.

ITEM 23 – LIABILITIES TO NON-EURO AREA RESIDENTS DENOMINATED IN EURO

Item 23 reflects the euro deposits of non-euro area residents.

ITEM 24 – LIABILITIES TO EURO AREA RESIDENTS DENOMINATED IN FOREIGN CURRENCY

Item 24 reflects the US dollar denominated repo transactions of euro area residents.

ITEM 25 – COUNTERPART OF THE SPECIAL DRAWING RIGHTS ALLOCATED BY THE IMF

Item 25 reflects the liability to the IMF arising from the IMF's decision of 7 August 2009 to increase the SDR issues for all of its member states. This was done in order to increase global liquidity using support from the foreign reserves of the member states. As a result, Estonia received 61,965,241 SDRs. On 2 August 2021 the IMF decided to increase the SDR issues for all of its member states. The aim was to increase the liquidity of global reserves and support the current economic position of weaker countries. As a result, Estonia received 233,479,644 SDRs (see item 2 "Receivables from the IMF" in the notes on the Balance Sheet).

ITEM 26 – OTHER LIABILITIES WITHIN THE EUROSYSTEM (NET)

Item 26 reflects net liabilities arising from the TARGET2 balance, and the difference between the monetary income pooled from and allocated to the Eurosystem central banks.

thousand euros

	31.12.2022	31.12.2021
TARGET2	1 547 436	0
Monetary income reallocation	-30 463	0
Other liabilities within the Eurosystem (net)	-675	0
Total	**1 516 299**	**0**

As at 31 December 2022 the item reflected net liabilities to the Eurosystem that arose from transfers made through the TARGET2 payment system by the central banks of other euro area countries. The remuneration of the TARGET2 balance is calculated daily at the latest available marginal interest rate used by the Eurosystem in its tenders for main refinancing operations.

The item also covers claims on the ECB in connection with the reallocation of monetary income from the difference between the amounts collected and allocated by the Eurosystem NCBs (see item 36 of the Profit and Loss account, "Net result of pooling of monetary income").

At the end of 2021 the result of those balances was a net claim, which is recorded under item 12 "Other claims within the Eurosystem (net)".

ITEM 27 – ACCRUALS AND DEFERRED INCOME

thousand euros

	31.12.2022	31.12.2021
Interest liabilities	29 726	35 160
Derivative instruments	20 441	7 207
TARGET2	3 141	0
Monetary policy operations	2 974	27 908
SDR allocation	1 698	33
Deposits of credit institutions	859	0
Repurchase transactions	610	11
Current accounts	4	0

	31.12.2022	31.12.2021
		thousand euros
Accounts payable	1 353	1 113
Tax liabilities	1 135	1 436
Vacation reserve	733	700
Employee salaries payable	700	924
Other liabilities	979	511
Total	**34 626**	**39 844**

Item 27 reflects accrued interest on financial instruments, most of which are interest liabilities from monetary policy operations and derivative transactions. The item also reflects liabilities that were expected but unpaid on the balance sheet date, most of which are tax liabilities and unpaid bills for services provided to Eesti Pank.

ITEM 28 – SUNDRY LIABILITIES

thousand euros

	31.12.2022	31.12.2021
Euro coins	79 740	73 293
Credits related to margin calls	13 812	0
Forward transactions in foreign currency	174	63
Other liabilities	13	14
Total	**93 739**	**73 370**

Item 28 mainly reflects euro coins issued.

The item reflects balances related to swap and forward transactions in foreign currency outstanding at year-end (see Item 42 “Derivative instruments”). These balances arise from the conversion of such transactions into their euro equivalents at the respective currency’s average cost on the balance sheet date, compared with the euro values at which the transactions were initially recorded (see “Off-balance-sheet instruments” in the notes on accounting policies).

ITEM 29 – PROVISIONS

thousand euros

	31.12.2022	31.12.2021
Exchange liability for Estonian kroons	27 674	27 910
Provision for financial risks	3 584	103 600
Total	**31 258**	**131 510**

Item 29 reflects the risk provision for financial risks and the provision to cover the exchange liability for the kroon.

The aim of risk provision is to cover the financial risks of monetary policy operations and investment assets with a provision. Under Article 32.4 of the Statute of the ESCB, the Eurosystem central banks share any losses that materialise from securities other than government bonds held under the securities market programme, the expanded asset purchase programme and the pandemic emergency purchase programme, in full in proportion to the prevailing ECB capital key shares. The risk provision is measured from various risk assessments using Value at Risk, Expected Shortfall and other measures. As at 31 December 2021, the general provision stood at EUR 103.6 million. The Executive Board decided to use EUR 100 million from the provision to cover financial risks to cover the loss made in 2022 (see item 33 “Net result of financial operations, write-downs and risk provisions” in the notes on the Profit and Loss account). The provision was reduced to EUR 3.6 million as at 31 December 2022.

A provision of EUR 29.6 million was set up in 2016 to cover the liability for exchanging kroons for euros, which covered 66% of the amount of the exchange liability. Statistics from other central banks on the coverage of earlier exchange liabilities were used in deciding the size of the provision. Future exchanges of kroons for euros will be funded from the provision. The provision was reduced in 2022 by EUR 235,892 through the return of kroons; in 2021 it was reduced by EUR 230,929. Estonian kroon banknotes and coins can be exchanged for euros at the shop of the Eesti Pank Museum with no limit of amount or duration at the rate of 1 EUR = 15.6466 EEK. The Executive Board assesses the size of the provision for the exchange liability every year, considering how much has been brought back in kroons for exchange during the year.

ITEM 30 – REVALUATION ACCOUNTS

thousand euros

	31.12.2022	31.12.2021
Foreign currency	12 728	10 501
Gold	6 888	6 091
Equity funds	578	54 042
Securities	30	5 301
Securities funds	0	1 882
Total	**20 224**	**77 817**

Revaluation accounts represent revaluation reserves that arise from unrealised gains on assets and liabilities. The unrealised losses at the end of the year are recognised in the Profit and Loss Account under “Write-downs on financial assets”.

ITEM 31 – CAPITAL AND RESERVES

Changes in capital and reserves in 2022:

thousand euros

	31.12.2022	Distribution of profit for 2021	31.12.2021
Fixed capital	100 000	0	100 000
Reserve capital	171 445	2 761	168 683
Special purpose reserve	214 314	0	214 314
Total	**485 759**	**2 761**	**482 997**

Under Section 30 of the Eesti Pank Act, at least 25% of the annual profit must be allocated to increasing statutory capital up to the amount set by the Riigikogu[35]. The amount set by the Riigikogu in the statutory capital is given in the Eesti Pank Act as EUR 100 million[36]. At the decision of the Supervisory Board of Eesti Pank, Eesti Pank directs at least 25% of its annual profits to building up its reserve capital[37]. Following the decision of the Eesti Pank Supervisory Board of 28 April 2015 on the distribution of Eesti Pank’s profits for 2014, Eesti Pank’s reserve capital was equal to its statutory capital. When Eesti Pank’s reserve capital became equal to its statutory capital, the Riigikogu decided on 12 April 2016 to continue increasing Eesti Pank’s reserve capital to EUR 300 million. After these allocations, part of the profit can be allocated for establishing and supplementing endowments and foundations for specific purposes, at the decision of the Supervisory Board of Eesti Pank. The remaining profit is transferred to the state budget. The bank transferred EUR 0.9 million from its profit for 2021 to the state budget in 2022.

35 Eesti Pank Act § 30 (2)
36 Eesti Pank Act § 25 (2)
37 Eesti Pank Act § 30 (3)

NOTES ON THE PROFIT AND LOSS ACCOUNT

ITEM 32 – NET INTEREST INCOME

thousand euros

	2022	2021
Net interest income	794	27 902

Interest income	**303 106**	**180 851**
Derivative instruments	207 603	107 407
Securities	46 495	32 655
Intra-Eurosystem balances	37 040	35 395
Current accounts	4 469	70
Reverse repurchase transactions	2 407	146
Securities funds	2 384	1 038
Deposits	1 887	4 098
Fixed-term deposits	446	6
Securities lending	325	23
Loans to employees of Eesti Pank	5	4
Other interest income	46	8

Interest expenses	**-302 312**	**-152 949**
Derivative instruments	-224 837	-117 003
Intra-Eurosystem balances	-52 549	-18 984
Securities	-12 221	-16 582
Repurchase transactions	-5 951	-252
Current accounts	-4 596	-128
Deposits	-2 100	0
Other interest expenses	-59	0

thousand euros

	2022	2021
Intra-Eurosystem interest income	**37 040**	**35 395**
Monetary policy operations	20 261	32 478
Securities held for monetary policy purposes	10 279	2 917
Allocation of banknotes within the Eurosystem	5 933	0
Transfer of foreign currency reserves	567	0

Intra-Eurosystem interest expense	**-52 549**	**-18 984**
Monetary policy operations	-38 299	-18 984
TARGET2	-14 250	0

ITEM 33 – NET RESULT OF FINANCIAL OPERATIONS, WRITE-DOWNS AND RISK PROVISIONS

thousand euros

	2022	2021
Net result of financial operations, write-downs and risk provisions	**-13 883**	**2 187**

Realised gain arising from financial operations	**-13 908**	**23 600**
Securities	-44 333	6 870
Securities funds	-478	165
Financial asset management costs	-26	-10
Equity funds	25 199	11 813

thousand euros

	2022	2021
Exchange rate income/expenses	5 263	4 534
Derivative instruments	467	228
Write-downs on financial assets	**-99 991**	**-10 414**
Unrealised losses from securities	-67 676	-10 397
Unrealised losses from bond funds	-23 291	0
Unrealised losses from equity funds	-8 285	0
Unrealised losses from exchange rates	-744	-20
Net change of loan portfolio write-downs	4	4
Provision for financial risks	**100 016**	**-11 000**

ITEM 34 – NET INCOME FROM FEES AND COMMISSIONS

thousand euros

	2022	2021
Net income from fees and commissions	**584**	**361**
Fees and commissions income	**643**	**368**
Current accounts service fees	633	366
Fines, arrears and other	10	2
Fees and commissions expenses	**-59**	**-7**
Commission fees	-54	-3
Other fees and commissions	-5	-4

ITEM 35 – INCOME FROM EQUITY SHARES AND PARTICIPATING INTERESTS

thousand euros

	2022	2021
Income from equity shares and participating interests	**4 553**	**5 039**
Dividends from equity funds	3 468	3 368
Dividends from participation in the IMF	893	35
Allocation of ECB profit	118	1 079
Dividends from the Bank for International Settlements	74	134
Interim profit distribution of the ECB	0	423

The item mainly reflects dividend income from equity funds. Given the general financial return, the Governing Council of the ECB decided in 2022 not to distribute the seigniorage from banknotes in circulation or the income earned from the securities purchased under the SMP, the APP and the PEPP (see “Interim profit distribution of the ECB” in the notes on accounting policies).

ITEM 36 – NET RESULT OF POOLING OF MONETARY INCOME

thousand euros

	2022	2021
Net result of pooling of monetary income	**30 463**	**-12 705**
Monetary income reallocation	30 340	-13 073
Monetary income pooled by Eesti Pank	10 238	-16 369
Monetary income allocated to Eesti Pank	20 102	3 296
Adjustment for the monetary income of previous years	122	367

The net result of the pooling of monetary income from the Eurosystem central banks in 2022 totalled EUR 7136.1 million, which includes the share of Eesti Pank. The monetary income pooled by the Eurosystem is allocated between the Eurosystem central banks in line with their subscription to the ECB's capital key. The difference between the monetary income pooled by Eesti Pank of EUR -10.2 million and that reallocated to Eesti Pank of EUR 20.1 million is the net result of EUR 30.3 million in monetary income. The monetary income pooled by Eesti Pank consists of intra-Eurosystem interest revenues and expenses, which are recorded under item 32 "Net interest income". The monetary income has been allocated to Eesti Pank in proportion to its paid up share of the ECB capital key. Eesti Pank's share in the capital key is 0.2817%.

The amount of each national central bank's monetary income is determined by measuring the actual annual income that derives from the earmarkable assets held against its liability base.

Earmarkable assets are: lending to euro area credit institutions related to monetary policy operations denominated in euro; securities held for monetary policy purposes; claims equivalent to the transfer of foreign reserve assets to the ECB; net intra-Eurosystem claims resulting from TARGET2 transactions; net intra-Eurosystem claims related to the allocation of euro banknotes within the Eurosystem; interest claims accrued recorded at the end of the month on monetary policy transactions with a maturity of over one year; and a limited amount of each national central bank's gold holdings in proportion to each national central bank's capital key share.

The liability base consists mainly of: banknotes in circulation; liabilities to euro area credit institutions related to monetary policy operations denominated in euro; net intra-Eurosystem liabilities resulting from TARGET2 transactions; net intra-Eurosystem liabilities related to the allocation of euro banknotes within the Eurosystem; and interest liabilities accrued recorded at the end of the month on monetary policy operations with a maturity of over one year. Any interest paid on liabilities included within the liability base is to be deducted from the monetary income to be pooled.

The monetary income of each national central bank is found by measuring the actual income from the assets earmarked in the accounts. Gold is considered to generate no income, and the following are considered to generate income at the latest available marginal interest rate used by the Eurosystem in its tenders for main refinancing operations: i) securities held for monetary policy purposes under Decision ECB/2009/16 of 2 July 2009 on the implementation of the covered bonds purchase programme; ii) securities held for monetary policy purposes under Decision ECB/2011/17 of 3 November 2011 on the implementation of the second covered bond purchase programme; and iii) debt instruments issued by central, regional or local governments and recognised agencies and substitute debt instruments issued by public non-financial corporations under Decision ECB/2020/9 of 3 February 2020 on the implementation of a secondary markets public sector asset purchase programme or Decision ECB/2020/17 of 24 March 2020 on a temporary pandemic emergency purchase programme.

Where the value of an NCB's earmarkable assets exceeds or falls short of the value of its liability base, the difference is offset by applying to the value of the difference the latest available marginal rate for the Eurosystem's main refinancing operations and the total income or expense for the year is considered in the allocation of monetary income.

ITEM 37 – OTHER INCOME

thousand euros

	2022	2021
Other income	**2 471**	**2 125**
Income from the sale of collector coins and numismatic products	1 082	598
Expenses reimbursed by Finantsinspektsioon	1 078	944
Income on financial asset management	114	18
Exchange liability for euro collector coins	100	106
Income from sales of assets	31	1
Income from earlier periods	19	416
Rental income	9	7
Other income	37	36

Under the cooperation agreement between Finantsinspektsioon and Eesti Pank, Finantsinspektsioon reimburses monthly 100% of the cost of the support services provided by Eesti Pank. Eesti Pank provides Finantsinspektsioon with information technology, accounting, real estate, and administration services. Finantsinspektsioon covers the depreciation costs of the fixed assets used.

Income from asset management includes the service fee paid by the Guarantee Fund to Eesti Pank for investing their assets. Income from the rent of the training centre of Eesti Pank is recorded under “Rental income”.

ITEM 38 – STAFF COSTS

thousand euros

	2022	2021
Staff costs	**-12 346**	**-11 337**
Salaries	-8 975	-8 238
Social tax	-3 034	-2 794
Compensations and benefits	-269	-242
Unemployment insurance tax	-68	-63

Compensation and benefits is mainly pension benefits and fringe benefits and various sundry benefits.

On average, there were 229.5 full-time equivalent employees at Eesti Pank in 2022, and 227.1 in 2021.

ITEM 39 – ADMINISTRATIVE EXPENSES

thousand euros

	2022	2021
Administrative expenses	**-7 292**	**-5 777**
Information technology maintenance	-2 648	-2 201
Real estate renovation and management	-1 853	-1 399
Financial asset management	-1 310	-1 245
Public relations and publications	-367	-288
Business travel	-249	-20
Office	-169	-124
Economic research	-161	-85
Training	-153	-106
Communications and transport	-57	-35
Legal expertise and arbitration	-35	-43
Other administrative expenses	-290	-233

The overall rise in administrative expenses in 2022 came mainly from a substantial rise in prices of infrastructure services and an increase in administrative expenses for information and communications technology. Maintenance costs for information technology cover the costs of maintenance of software and hardware, data communication and consultation for procurements.

The costs of financial asset management comprise the cost of purchasing market information, and fees for cross-border payments.

The costs of public relations and publications cover the costs of public events, publications, information agencies, the public website and online databases, public relations research polls, information campaigns, and the Museum of Eesti Pank.

Business travel expenses reflect the costs of staff business travel on behalf of Eesti Pank and for work with international organisations and financial institutions. Most meetings in 2021 were held in online form because of the pandemic restrictions, but in the second half of 2022 there was a notable rise in the number of in-person meetings. There were a total of 309 business trips in 2022; there were 71 in 2021.

ITEM 40 – BANKNOTE PRODUCTION SERVICE

Eesti Pank participates in the production of euro banknotes together with other central banks of the euro area. The Governing Council of the ECB sets the amount of euro cash that must be produced each year for the euro area countries. Eesti Pank procured its euro banknotes through a joint tender with eight other euro area central banks. Production of the second series of 50-euro banknotes for the Eurosystem was paid for.

ITEM 41 – OTHER OPERATING EXPENSES

thousand euros

	2022	2021
Other operating expenses	**-2 629**	**-1 354**
Production of coins	-1 233	-623
Production of collector coins and numismatic products	-1 002	-524
Cash circulation management	-100	-68
Other expenses	-295	-140

ITEM 42 – DERIVATIVE INSTRUMENTS

thousand euros

	31.12.2022	31.12.2021
Foreign exchange swap and forward transactions		
Purchase	7 401	1 445 462
Sale	-7 448	-1 442 607
Value of interest rate future contracts		
Purchase	0	1 060
Sale	-3 375	-2 432

ITEM 43 – CONTINGENT LIABILITIES

Bank for International Settlements

Since 1930 Eesti Pank has a contingent liability to the Bank for International Settlements for the unpaid part of the share capital (75%) of the BIS denominated in Swiss gold francs, which totalled EUR 682,598 at the end of 2022 (EUR 642,821 at the end of 2021) (see Item 14 “Other financial assets”).

Production of banknotes

At the end of 2022, the contractual liabilities of Eesti Pank for printing banknotes and minting coins in 2023 amounted to EUR 450 thousand.

ITEM 44 – IMPORTANT POST-BALANCE-SHEET EVENTS

Under Council Decision (EU) 2022/1211 of 12 July 2022, taken in accordance with Article 140 paragraph 2 of the Treaty on the Functioning of the European Union, Croatia started using the euro as its currency from 1 January 2023. Under Article 48.1 of the Statute of the ESCB and the legislation adopted by the Governing Council of the ECB on 30 December 2022[38], Hrvatska Narodna Banka paid the ECB the missing part of its subscribed capital. As a result, Eesti Pank’s share of the capital paid into the ECB by the central banks of the euro area was 0.2794% from 1 January 2023, having been 0.2817% until 31 December 2022. Eesti Pank’s share in the capital key is 0.2291%.

38 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, 19.1 2023 pp. 94-98); 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 Article 30.3 of the Statute of the European System of Central Banks and of the European Central Bank (OJ C 18, 19.01.2023 pp. 1-3).

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Translation of the Estonian Original

INDEPENDENT AUDITOR'S REPORT

To the Supervisory Board of Eesti Pank

Opinion

We have audited the financial statements of Eesti Pank, which comprise the balance sheet as at 31 December 2022, and the profit and loss account for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of Eesti Pank as at 31 December 2022, and its financial performance for the year then ended in accordance with the Guideline of the European Central Bank of 3 November 2016 on the legal framework for accounting and financial reporting in the European System of Central Banks (ECB/2016/34) (recast), and the Bank of Estonia (Eesti Pank) Act.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (Estonia). Our responsibilities under those standards are further described in the "Auditor's responsibilities for the audit of the financial statements" section of our report. We are independent of Eesti Pank in accordance with the International Code of Ethics for Professional Accountants (including International Independence Standards) (IESBA code) together with the ethical requirements that are relevant to our audit of financial statements in Estonia, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the IESBA code.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other information

Other information consists of an overview of the financial position of Eesti Pank, but does not consist of the financial statements and our auditor's report thereon. Management is responsible for the other information.

Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon, except as indicated below.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of management and those charged with governance for the financial statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with the Guideline of the European Central Bank of 3 November 2016 on the legal framework for accounting and financial reporting in the European System of central Banks (ECB/2016/34) (recast), and the Bank of Estonia (Eesti Pank) Act, and for such internal control as management determines is 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, management is responsible for assessing Eesti Pank's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate Eesti Pank or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing Eesti Pank's financial reporting process.

Auditor's responsibilities for the audit of the 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 International Standards on Auditing (Estonia) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with International Standards on Auditing (Estonia), we exercise professional judgment and maintain professional skepticism 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 Eesti Pank'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 management'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 Eesti Pank'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 Eesti Pank 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 in a manner that achieves fair presentation.

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.

Tallinn, 15 March 2022

Olesia Abramova
Authorised Auditor's number 561
Ernst & Young Baltic AS
Audit Company's Registration number 58
Rävala pst 4, 10143 Tallinn

APPENDIX 1. DECISIONS OF THE SUPERVISORY BOARD OF EESTI PANK IN 2022

01.03.2022 Decision No 2-1
Profit distribution strategy of Eesti Pank

05.04.2022 Decision No 3-1
Annual Report of Eesti Pank 2021

05.04.2022 Decision No 3-2
Eesti Pank profit distribution for 2021

05.04.2022 Decision No 3-3
Salary of the Deputy Governors of Eesti Pank

05.04.2022 Decision No 3-4
Salary of the Governor of Eesti Pank

05.04.2022 Decision No 3-5
Salary of the Head of the Internal Audit Department

04.05.2022 Decision No 4-1
Approval of the design for the two-euro commemorative coin for Ukraine and Freedom

10.05.2022 Decision No 5-1
Approval of the design for the two-euro commemorative coin for the national bird, the barn swallow

10.05.2022 Decision No 5-2
Approval of the design and nominal value for a silver collector coin for the Estonian farming couple

15.09.2022 Decision No 7-1
Appointment of a member of the Supervisory Board of Finantsinspektsioon

18.10.2022 Decision No 8-1
Salary of the Head of the Internal Audit Department

15.11.2022 Decision No 9-1
Approval of the design and nominal value of a silver collector coin dedicated to the 150th anniversary of the birth of Konstantin Konik

15.11.2022 Decision No 9-2
Approval of the design and nominal value of a silver collector coin dedicated to the 150th anniversary of the birth of Konstantin Päts

APPENDIX 2.
DECREES OF THE GOVERNOR OF EESTI PANK IN 2022

No 1, 19 January 2022
Issue of a collector coin dedicated to the 150th anniversary of the birth of Johan Pitka
(officially published: RT I, 20.01.2022, 2)
Under the decree a silver collector coin dedicated to the 150th anniversary of the birth of Johan Pitka with a nominal value of 15 euros was issued on 19 February 2022.

No 2, 1 February 2022
Amendment of Eesti Pank Governor's Decree No 3 of 30 March 2021 "Establishment of supplementary reports on a credit institution's balance sheet"
(officially published: RT I, 04.02.2022, 8)
The requirements and terminology of the decree were updated and new wordings were given for Appendix 6 "Report on housing loans" and Appendix 11 "Report on the balance of liabilities related to securities".

No 3, 28 January 2022
The list of statistical actions of Eesti Pank under the official statistical programme
(officially published: RT I, 03.02.2022, 27)
The decree confirmed the list of statistical actions of Eesti Pank under the official statistical programme 2022–2026.

No 4, 17 May 2022
Establishment of the systemic risk buffer requirement for Lithuanian retail claims backed by residential real estate
(officially published: RT I, 19.05.2022, 9)
All credit institutions licensed to operate in Estonia were required to apply a 2% systemic risk buffer rate for retail claims backed by residential real estate on natural persons resident in Lithuania when calculating the systemic risk buffer.

No 5, 27 June 2022
Statistical Reporting Requirements for Savings and Loan Associations and the Procedure for the Submission of Reports
(officially published: RT I, 01.07.2022, 17)
The decree set updated requirements and procedures for preparing and submitting the statistical reporting of savings and loan associations and replaces a similar decree that was in force earlier.

No 6, 22 September 2022
Approval of the harmonised conditions for participation in TARGET-Eesti
(officially published: RT I, 24.09.2022, 2)
The harmonised conditions for participation in TARGET-Eesti in accordance with Guideline ECB/2022/8 of the European Central Bank of 24 February 2022 on a new-generation Trans-European Automated Real-time Gross Settlement Express Transfer system (TARGET). The TARGET-Eesti settlement system created by the decree will replace the earlier TARGET2-Eesti settlement system. Decree No 4 of the Governor of Eesti Pank of 9 May 2008 "Approval of TARGET2-Eesti rules" was repealed.

No 7, 22 September 2022

Terms and conditions for the opening and using of accounts of credit institutions in Eesti Pank

(officially published: RT I, 24.09.2022, 3)

The decree set updated requirements and procedures for keeping the accounts of credit institutions at Eesti Pank and replaces a similar decree that was in force earlier. The rules for keeping accounts were updated because of the transfer from the TARGET2-Eesti settlement system to the TARGET-Eesti settlement system.

No 8, 30 September 2022

Issue of a gold collector coin dedicated to the Livonian Diet

(officially published: RT I, 04.10.2022, 1)

Under the decree a gold collector coin dedicated to the Livonian Diet with a nominal value of 25 euros was issued on 25 October 2022.

No 9, 8 November 2022

Amendment of Decree No 6 of the Governor of Eesti Pank of 22 September 2022, "Approval of the harmonised conditions for participation in TARGET-Eesti"

(officially published: RT I, 11.11.2022, 6)

At the decision of the European Central Bank the start date for the new-generation Trans-European Automated Real-time Gross Settlement Express Transfer system (TARGET) was postponed from the initially planned 21 November 2022 to 20 March 2023. The date of entry into force of Decree No 6 was amended accordingly.

No 10, 24 November 2022

Amendments to Decree No 7 of the Governor of Eesti Pank of 30 May 2016 "Confirming the change to the list of other systemically important credit institutions and setting the other systemically important institution buffer rate"

(officially published: RT I, 29.11.2022, 5)

The decree raised the other systemically important institution buffer rate requirement for LHV Pank from 1.5% to 2% and clarified the general procedure for meeting that requirement by credit institutions that are part of a consolidation group.

No 11, 28 November 2022

The countercyclical capital buffer rate

(officially published: RT I, 01.12.2022, 1)

The decree set the countercyclical capital buffer rate for credit institutions at 1.5% of the credit risk exposures located in Estonia from 1 December 2023.

APPENDIX 3. PUBLICATIONS IN 2022

Estonian Economy and Monetary Policy

Estonian Economy and Monetary Policy 1/2022
Estonian Economy and Monetary Policy 2/2022
Estonian Economy and Monetary Policy 3/2022
Estonian Economy and Monetary Policy 4/2022

Financial Stability Review

Financial Stability Review 1/2022
Financial Stability Review 2/2022

Labour Market Review

Labour Market Review 1/2022
Labour Market Review 2/2022

Financing of the Economy February 2022

Estonian Competitiveness Report 2022

Financial Sector Structural Review 2022

Working Papers of Eesti Pank in 2022

1/2022 Olivier Damette, Karolina Sobczak, Thierry Betti. Financial Transaction Tax, macroeconomic effects and tax competition issues: a two- country financial DSGE model

2/2022 Alari Paulus. Business investment, the user cost of capital and firm heterogeneity

3/2022 Karsten Staehr, Katri Urke. The European Structural and Investment Funds and Public Investment in the EU Countries

4/2022 Merike Kukk, Alari Paulus, Nicolas Reigl. Credit market concentration and systemic risk in Europe

5/2022 Jaanika Meriküll, Alari Paulus. Were jobs saved at the cost of productivity in the Covid-19 crisis?

6/2022 Gerda Kirpson, Martti Randveer, Nicolas Reigl, Karsten Staehr, Lenno Uusküla. Macroeconomic news and sovereign interest rate spreads before and during quantitative easing

7/2022 Merike Kukk, Natalia Levenko. Interest rate spreads in Estonia: Different stories for different types of loan

Other publications

Bibliography Estonian economic history 1918–1940

Euro cash

The Eesti Pank blog

Kristjan Mäe. Growth in levels of sovereign debt could increase risks in the financial sector. 14.01.2022

Madis Müller. Factors driving and restraining inflation in Estonia. 31.01.2022

Madis Müller. The central banks of Europe are gradually reducing their support for its economies. 4.02.2022

Kaspar Oja. How much of the economy is affected by exports to Russia? 18.02.2022

Peeter Luikmel. Indirect impacts on the global economy of Russia's military activities. 28.02.2022

Kaspar Oja. How does Putin's war in Ukraine affect the Estonian economy? 10.03.2022

Madis Müller. The war means that inflation will remain higher for longer in the euro area. 11.03.2022

Peeter Luikmel. What would happen if we had to pay for gas in roubles? 26.03.2022

Madis Müller. High inflation means that money creation by the European Central Bank will end soon. 15.04.2022

Madis Müller. At what point does high inflation become the fault of the central bank? 10.06.2022

Madis Müller. The time for negative interest rates in the euro area is over. 22.07.2022

Kaspar Oja. The rise in the electricity price in Estonia is inexplicably large. 26.07.2022

Madis Müller. High inflation demanded a firm response from the central bank. 09.09.2022

Nils Vaikla. Fighting high inflation has to be the most important job for central banks and governments says the IMF. 26.10.2022

Madis Müller. The bitter medicine of rising interest rates will help defeat high inflation. 28.10.2022

Karsten Staehr. The Nobel prizes in economics were awarded for research into banks and financial crises. 1.11.2022

Martti Randveer. Earlier periods of high inflation can serve as a roadmap for central banks. 23.11.2022

Raol Kallas. The Eesti Pank housing loan requirements have helped dissuade excessively risky lending. 2.12.2022

Kaspar Oja. Overestimation of the rise in electricity prices is a problem throughout Europe. 5.12.2022

Kaspar Oja. Europe should harmonise its rules on state aid to businesses in order for the economy to recover. 15.12.2022

Madis Müller. The European Central Bank is continuing to raise interest rates to force high inflation down. 16.12.2022

Anita Suurlaht-Donaldson. The banks in Estonia are aware of the risks of the transition to a climate-friendly economy. 19.12.2022

Peeter Luikmel. The year of crazily sharp rises in interest rates is over. 23.12.2022

Silver Karolin. The rise in bond interest rates will affect Estonian banks little. 27.12.2022

Publications by staff of Eesti Pank in 2022

Author(s)	Title	Published
Merike Kukk, Jaanika Meriküll, Tairi Rõõm	The gender wealth gap in Europe: Application of machine learning to predict individual-level wealth	Review of Income and Wealth, 2022, online publication
Jaanika Meriküll, Alari Paulus	The impact of the Covid-19 job retention support on employment	Economic Letters, 2022, online publication
Merilen Laurimäe, Tiiu Paas, Alari Paulus	The effect of COVID-19 and the wage compensation measure on income-related gender disparities	Baltic Journal of Economics, 2022, Vol 22(2), pp 146-166
Juan Carlos Cuestas, Merike Kukk, Natalia Levenko.	Misalignments in house prices and economic growth in Europe	Applied Economics, 2022, online publication
Nicolas Reigl	Noise shocks and business cycle fluctuations in three major European economies	Empirical Economics, 2022, online publication
Karsten Staehr, Katri Urke	EU funding and public investment in the EU countries	Empirica, 2022 (pending)
Natalia Levenko, Karsten Staehr	Self-reported tax compliance in post-transition Estonia	Economic Systems, 2022 (pending)
Jaanika Meriküll, Maryna Tverdostup	The gap that survived the transition: the gender wage gap over three decades in Estonia	Economic Systems, 2022 (pending)
Eva Branten	The role of risk attitudes and expectations in household borrowing: evidence from Estonia	Baltic Journal ofEconomics, 2022, Vol 22, pp 126-145

This list does not include three articles that had already appeared in online scientific journals in 2021 and are not listed here to avoid repetition.