

FINANCIAL STABILITY REPORT 2022



Financial stability: the condition in which the financial system (financial intermediaries, market and market infrastructure) is capable of withstanding shocks without significant disruptions in the financial intermediation process and the supply of financial services.

Systemic risk: the risk that the inability of one participant to meet its obligations will cause other participants to be unable to meet their obligations when they become due, potentially with spillover effects threatening the stability of or confidence in the financial system, economic growth and welfare.

The purpose of the "Financial Stability Report" is to raise public awareness of the development of the Latvian financial system and draw attention to systemic risks.

The "Financial Stability Report" analyses and evaluates the performance of the Latvian financial system and risks on the basis of data available up to the end of March 2022 or at the moment of compiling the current report.

Data on the branches of foreign credit institutions registered in the Republic of Latvia have been disregarded for the purposes of calculating the ROE, the total capital ratio, Tier 1 capital ratio, CET1 ratio; nor have they been used for liquidity and credit risk stress tests.

Charts and tables have been compiled on the basis of the following data sources: Chart 1.1 – IMF, Chart 1.2 – Reuters, ECB, Chart 1.3 – ECB, EBA, Charts 1.4 and 1.5 – ECB, Chart 1.6 – ECB, Eurostat, estimates by Latvijas Banka, Charts 1.7 and 1.8 – CSB, estimates by Latvijas Banka, Charts 1.9 and 1.10 – Latvijas Banka, Chart 1.11 – the Ministry of Finance, CSB and estimates by Latvijas Banka, Chart 1.12 – AS Attīstības finanšu institūcija Altum, SRS and CSB, Chart 1.13 – Latvijas Banka, Charts 1.14–1.17 – CSB, Chart 1.18 – the Latvian Open data portal, Chart 1.19 – CSB, Chart 1.20 – CSB, assessment by Latvijas Banka, Charts 1.21–1.24 – CSB, Credit Register, Chart 1.25 – State Unified Computerized Land Register, Chart 1.26 – CSB, Chart 1.27 – CSB, Central Statistical Bureau of Lithuania, Central Statistical Bureau of Estonia, Chart 1.28 – CSB, SIA LATIO, SIA Ober Haus Real Estate Latvia, SIA ARCO REAL ESTATE, Chart 1.29 – CSB, Chart 1.30 – State Unified Computerized Land Register, the Land Register of Lithuania, Land Register of Estonia, Chart 1.31 – the Latvian Open data portal, Chart 1.32 – CSB, Charts 1.33 and 1.34 – SIA Colliers International Advisors, Charts 2.1 and 2.2 – estimates by Latvijas Banka, Chart 2.3 – Latvijas Banka, Chart 2.4 – ECB, Charts 2.5–2.9 – estimates by Latvijas Banka, Chart 2.10 – ECB, estimates by Latvijas Banka, Chart 2.11 – estimates by Latvijas Banka, Chart 2.12 – Latvijas Banka, Charts 2.13–2.15 – estimates by Latvijas Banka, Chart 2.16 – FCMC, Latvijas Banka, Chart 2.17 – estimates by Latvijas Banka, Chart 2.18 – Latvijas Banka, Charts 2.19–2.22 – estimates by Latvijas Banka, Charts 2.23 and 2.24 – Latvijas Banka, Charts 2.25 and 2.26 – the ECB's Statistical Data Warehouse, Charts 2.27–2.29 – Latvijas Banka, Chart 2.30 – FCMC, Charts 2.31–2.33 – Latvijas Banka, FCMC, estimates by Latvijas Banka, Chart 2.34 – FCMC, Chart 2.35 – FCMC and EBA, Chart 2.36 – Swedbank, Chart 2.37 – FCMC and EBA, Chart 2.38 – FCMC and EBA, Chart 2.39 – Castellum.AI, Chart 2.40 – FCMC, estimates by Latvijas Banka, Chart 2.41 – FCMC, EBA, Charts 2.42 and 2.43 – FCMC, Tables 2.1–2.6 – estimates by Latvijas Banka, Chart 2.44 – FCMC, estimates by Latvijas Banka, Table 3.1 and Chart 3.1 – FCMC, Chart 3.2 – FCMC, CSB, estimates by Latvijas Banka, Charts 3.3 and 3.4 – estimates by Latvijas Banka, Table 3.2 – BCBS, Chart 4.1 – Latvijas Banka, CSB, FCMC, Chart 4.2 – SSIA, Table 4.1 – regulations of the Cabinet of Ministers, Table 4.2 – FCMC, estimates by Latvijas Banka, Chart 4.3 – estimates by Latvijas Banka, Chart 4.4 – FCMC, EIOPA, estimates by Latvijas Banka, Charts A1.1–A1.4 – SRS, LEGMC, Chart A1.5 – SRS, Enterprise Register, LEGMC, Latvijas Banka, Chart A2.1 – the household survey conducted by Latvijas Banka and estimates by Latvijas Banka, Chart A2.2 – the household survey conducted by Latvijas Banka and estimates by Latvijas Banka, CSB, Charts A2.3–A2.10 – the household survey conducted by Latvijas Banka and estimates by Latvijas Banka, Charts A4.1–A4.3 – estimates by Latvijas Banka, Chart A4.4 – estimates by Latvijas Banka, ECB, Yahoo Finance, Charts A5.1 and A5.2 – the credit institution survey conducted by Latvijas Banka, Table A6 – Latvijas Banka, FCMC, Appendix A7 – FCMC, CSB, Reuters, Bloomberg, Eurostat, ECB, Latvijas Banka and its estimates.

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Abbreviations

AML/CFTP – anti-money laundering and combating the financing of terrorism and proliferation	LGD – loss given default
AS – joint stock company	LGIA – Latvian Geospatial Information Agency
BCBS – Basel Committee on Banking Supervision	LTI – loan-to-income
CCB – countercyclical capital buffer	LTV – loan-to-value
CCRI – composite cyclical risk indicator	MFI – monetary financial institution
CDS – credit default swap	MPC – mandatory procurement component
CET1 – Common Equity Tier 1	MREL – minimum requirement for own funds and eligible liabilities
CIS – Commonwealth of Independent States	NFC – non-financial corporation
CISS – composite indicator of systemic stress	NPLs – non-performing loans
CSB – Central Statistical Bureau of Latvia	NSFR – net stable financing ratio
DSTI – debt-service-to-income	OF – output floor
DTI – debt-to-income	O-SII – other systemically important institution
EBA – European Banking Authority	PD – probability of default
EBIT – earnings before interest and taxes	PEPP – Pandemic Emergency Purchase Programme
EC – European Commission	ROA – return on assets
ECB – European Central Bank	ROE – return on equity
EEA – European Economic Area	RWA – risk-weighted assets
EIOPA – European Insurance and Occupational Pensions Authority	SCR – solvency capital ratio
ESMA – European Securities and Markets Authority	SFPS – State-funded pensions system
ESRB – European Systemic Risk Board	SIA – limited liability company
EU – European Union	SME – small and medium-sized enterprise
EURIBOR – Euro Interbank Offered Rate	SRS – State Revenue Service
FCMC – Financial and Capital Market Commission	TLTRO III – targeted longer-term refinancing operations
FRS – US Federal Reserve System	UK – United Kingdom
GDP – Gross Domestic Product	US – United States of America
ICR – interest coverage ratio	VH – vulnerable household
IMF – International Monetary Fund	VNFC – vulnerable non-financial corporation
IT – information technologies	VNFCB – vulnerable non-financial corporation borrower
LCR – liquidity coverage ratio	
LEGMC – Latvian Environment, Geology and Meteorology Centre	

SUMMARY

Recovery of the economy and the financial sector is weakened by new challenges: the war in Ukraine, energy and commodity price shocks and more severe supply disruptions. Furthermore, concerns about further spread of Covid-19 are still present.

The Russian invasion of Ukraine has affected the global economic development and national policies in many areas: defence, energy, foreign affairs and the economy. The war has increased uncertainty, and its impact manifests itself globally via various direct and secondary effects. The economic prospects have deteriorated, while inflation has significantly increased. Financing conditions are deteriorating, and there is a risk of further abrupt asset price correction.

Overall, the Latvian economy and financial sector has limited links with the countries involved in the war. The main influence channels are higher energy and other commodity prices, import commodity supply disruptions, deteriorating confidence, as well as cutting economic ties with Russia and Belarus. These factors affect borrowers' solvency and investment decisions, in particular in the sectors that have been weakened by the pandemic, that are energy-intensive or suffering from severe supply disruptions or challenges in sales markets. In the household sector, the rising costs mostly affect low-income households, while more well-off households mitigate these risks with savings that have increased during the pandemic. Overall, the total debt of the non-financial private sector is low and has not increased during the pandemic.

The credit and profitability risks of credit institutions have increased. At the same time, the resilience of the credit institution sector to shocks is good: in general, they have sufficient capital buffers to absorb the potential losses. Some small credit institutions have higher insolvency risks, but their total share in the credit institution sector is negligible.

With risks and the sanction burden increasing, **borrowers and lenders become more cautious. This has a negative effect on the already sluggish NFC lending activity and investment.** Lending standards are tightened, and borrowing costs will follow an upward path. **The protracted weak lending to NFCs is still a substantial financial intermediation deficiency.** It is determined by both supply and demand factors, as various structural policy deficiencies accumulate and interact in various areas.

Unlike NFCs, lending to households has become more active, and the war in Ukraine has not notably slowed it down. However, the annual rate of increase in loans to households for house purchase is still quite moderate. Moreover, this development is taking place from a very low starting point, as the previous decade saw really slow development.

Demand for housing has considerably increased. At the same time, the adequate supply still lags behind, as for many years the construction volume has been small. The increase in construction costs and supply disruptions of building materials have further undermined housing supply and contributed to already high prices. At the same time, **the risk of abrupt housing price correction is low**, as prices grow from a relatively low level, and the share of speculative/repeated transactions with residential real estate is low and does not increase. However, **considering the potential demand and housing market trends in Europe, imbalances in the housing market may increase.**

The commercial property market has so far managed to absorb the shocks of the pandemic, although it faces new challenges such as rising prices, supply challenges and slower economic growth. In the hotel segment,

the solvency risks are still high. However, investment of credit institutions in this sector is small. Both in the commercial property and the residential real estate market, a structural shift towards larger demand for energy efficient properties has been observed.

Due to the geopolitical situation and the energy price shock energy policy challenges have become more topical. Latvia has to strive to achieve national energy security and autonomy faster by investing in energy efficiency and energy infrastructure and facilitating the capacity of the renewable energy sector.

It is well aligned with the need to achieve greater progress in meeting climate targets, where the financial sector also plays an important role. **Climate change and the related transition risks are becoming ever more important.** Latvijas Banka has assessed the Latvian credit institutions loan and securities portfolios' exposition to the climate transition risks. This report includes an analysis of the corporate sector exposition to physical (heat and flood) climate risks, as well as recommendations for their mitigation.

Due to the war, cyber security risks and the related potential financial infrastructure disruption risks have significantly increased. So far Latvia has not faced critical cyber incidents, although their intensity is on the rise. To improve resilience to systemic cyber security incidents, at the end of 2021 the ESRB issued a recommendation on a European coordination mechanism for systemic cyber incidents to be used by European institutions and national micro and macro-prudential authorities.

The set of currently active macro-prudential measures is sufficient for mitigation of the identified systemic risks and potential vulnerabilities, as well as for the macro-financial situation. If lending to households becomes too fast, targeted measures to mitigate the potential imbalance should be considered (e.g. requirements for sectoral systemic risk buffer, review of the borrower-based measures and the state support programme for families with children (see the recommendation in the real estate section)). To mitigate the supply and demand imbalance in the residential real estate market, it is also important to remove barriers for the development of housing supply. The sustained structural problems that hinder the development of NFC lending should be addressed. Considering the higher credit risk and prevailing uncertainty, credit institutions should duly reclassify loans and build up appropriate provisions. Taking account of the pandemic experience, as well as the shrinking fiscal space, the state support to the private sector should be more targeted.

THE ECONOMY AND FINANCIAL SECTOR FACE CHALLENGES RELATED TO THE WAR IN UKRAINE, PRICE HIKES AND SUPPLY DISRUPTIONS, YET THE RESILIENCE OF CREDIT INSTITUTIONS REMAINS STRONG

Systemic risks



Mounting energy prices and inflation, supply disruptions, subdued pace of economic growth and deteriorating financial conditions that can affect customers of credit institutions, asset quality and profitability



Persistently weak NFC lending and investment

Potential systemic vulnerabilities



Rising imbalances in the residential real estate market



Dependence on developments and policies in parent banks and their home countries



Cyber attacks and other large-scale unexpected disruptions in the financial intermediation process



Climate change and the related transition risks

Resilience of credit institutions



The resilience of credit institutions against shocks stands strong, as their overall capital and liquidity buffers are sufficient.

Recommendations



If risks in the residential real estate market take an upward trend, targeted measures* should be considered.

Barriers to the development of housing supply should be reduced.

Structural issues regarding NFC lending should be addressed.

With credit risk following an upward path, problematic loans should be recognised in due time and appropriate provisions should be made.

Government support for the private sector should be more targeted.

* For instance, sectoral systemic risk buffer requirement, review of the borrower-based measures or the state support programme for families with children.

1. MACROFINANCIAL ENVIRONMENT AND BORROWERS' SOLVENCY

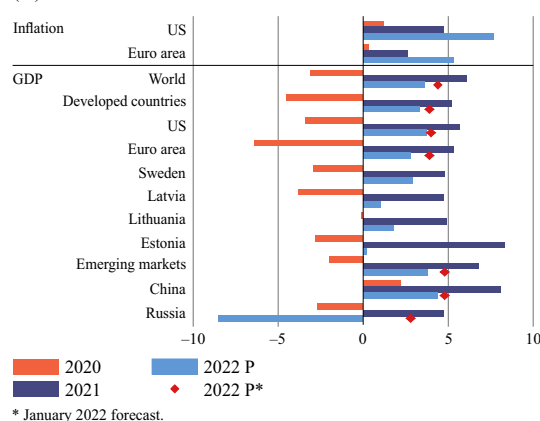
External macrofinancial environment

- *The Russian invasion of Ukraine dramatically changed the outlook for the global economic growth by increasing supply disruptions, as well as already rising energy and commodity prices and uncertainty.*
- *The rapid, stronger and more persistent than expected, rise in inflation has prompted central banks to move more quickly towards normalisation of the very accommodative monetary policy. Under the deteriorating financing conditions, the financing costs of governments and businesses are increasing in the financial markets.*
- *The financial stability risks in the euro area have increased mainly due to the rise in credit and market risks. The cyclical risks continue to evolve in a number of countries.*

In 2021, the global economic growth gradually rebounded owing to the increase in vaccination coverage, various support mechanisms and favourable financial conditions. However, **the recovery has been uneven across various regions, countries and economic sectors.** In addition, the growth was constrained by supply disruptions, increases in commodity and energy prices, as well as the rapid spread of the Omicron variant of the Covid-19 virus around the turn of the year and the wave of new restrictions (incl. China's zero-Covid policy).

The Russian invasion of Ukraine dramatically changed the outlook for global economic growth and increased uncertainty. Overall, the share of Russia and Ukraine in the global economy and the financial system is small. However, Russia is an important exporter of natural gas and oil, and both countries play an important role in the markets for metals, fertilisers, wheat and other commodities. Russia's war in Ukraine have significantly **increased the world's already aggravated supply disruptions. Changes are taking place in energy and commodity supply**

Chart 1.1
ANNUAL CHANGES IN REAL GDP AND CONSUMER PRICES
AND IMF PROJECTIONS IN APRIL 2022
(%)



chains and export markets, and the pressure on energy and commodity prices has increased.

According to the IMF forecasts, the annual growth rate of the global GDP is expected to decrease faster than expected and could reach 3.6% in 2022 (i.e. 2.5 percentage points less than in 2021 and 0.8 percentage points less than projected in early 2022; see Chart 1.1). Whereas inflation in developed countries alone could reach 5.7% on average, with some countries breaking records of several decades. The global economic growth and inflation are heavily affected by a marked uncertainty and several risk factors (e.g. a more severe than initially assessed impact of the war in Ukraine, continuously high energy and commodity prices, new Covid-19 outbreaks).

In response to the rapid and more persistent than expected rise in inflation, the leading central banks have begun reducing the very accommodative monetary policy. The US FRS and the Bank of England have ended their net asset purchases and started the cycle of raising interest rates. With rising inflation and mitigating the impact of the pandemic, the ECB is also gradually moving towards a normalisation of monetary policy, although the war in Ukraine has significantly increased uncertainty. In March 2022, the ECB decided to discontinue net purchases within the framework of the PEPP, as well as to end net asset purchases under its asset purchase programme and to

start raising key interest rates in the third quarter of 2022. For the time being, ECB interest rates remain at the historically lowest level.

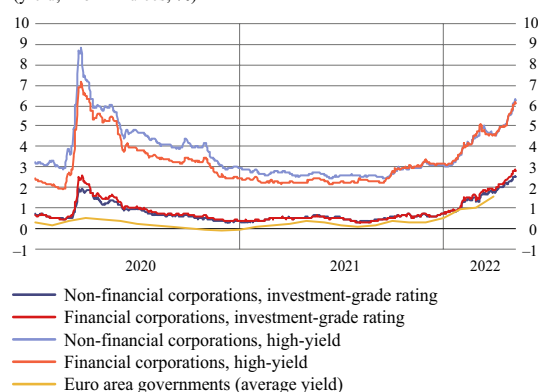
With inflation and expectations towards normalisation of monetary policy support increasing, financial conditions in the euro area and in other parts of the world have tightened, and financing costs of governments, banks and companies have increased. Since the beginning of 2022, the euro area government bond yields have picked up rapidly, followed by an increase in corporate and bank debt securities rates (see Chart 1.2). In the first quarter of 2022, banks in the euro area slightly tightened their credit standards and reported further tightening of standards, in particular with regard to NFC loans. However, as yet **there are no significant changes in lending dynamics or interest rates on loans in the euro area as a whole.**

The progress made by the major central banks towards the normalisation of monetary policy, the geopolitical crisis and a slower growth led to a stock market correction, suspending almost two years of growth. At the same time, prices of a number of financial assets (e.g. US shares or high-yield bonds) continue to diverge from fundamentals, **and the risks of sharp adjustments in financial markets and, consequently, financial stability risks have increased.** The non-bank financial sector is particularly sensitive to the rapid reassessment of risks in the financial markets.

During the pandemic, the government, NFC and household indebtedness has increased significantly worldwide, contributing to their exposure to interest rate risks and economic cycle fluctuations.

Deteriorating financial conditions may increase the costs of debt servicing and aggravate the possibilities for refinancing. This may also limit countries' fiscal capacity to provide further support to the economy, especially in countries with excessive debt levels. On the other hand, the slowdown in economic growth rates, high inflation and rising interest rates increase borrowers' solvency risks, particularly of highly indebted ones and those having received variable rate loans. Risks of negative feedback loops between governments, the private and financial sectors have increased.

Chart 1.2
10-YEAR EURO AREA GOVERNMENT BONDS AND EURO BONDS OF FINANCIAL AND NON-FINANCIAL CORPORATIONS
(yield; iBoxx indices; %)



At the same time, in early 2022, the cyclical risks continued on an upward path in a number of countries, raising concerns about a housing price-lending spiral and the growth of household indebtedness, as well as the likelihood of a rapid adjustment in housing markets and the credit risk of households also increased (see Box 1.1).

Risks to financial stability in the euro area have grown mainly due to the upward trend in credit and market risks, as well as due to the uncertainty caused by geopolitical tensions. Overall, the direct exposure of the euro area financial sector with the countries involved in the war is low. However, the second-round effects and the increased burden related to the compliance with the sanctions could have a significant impact. The deterioration of economic and diplomatic relations with Russia also increases the vulnerability of euro area banks' cyber security and the incident risks of the related critical financial infrastructures.

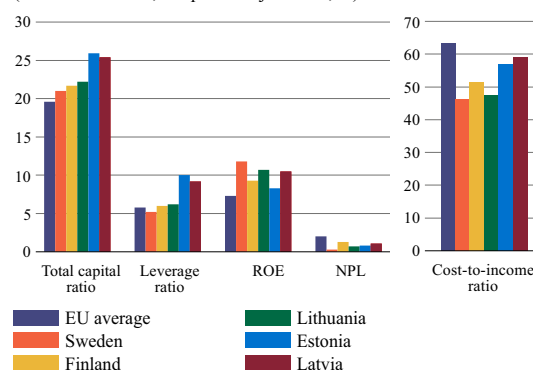
The capitalisation of the euro area banking sector and the absorption capacity of losses are good overall, but the situation is heterogeneous across countries and banks. While the share of bad credits in bank loan portfolios has declined during the pandemic, the amount outstanding of the forbore and Stage 2 loans has increased. Solvency of some borrowers was already weak before the exacerbation of geopolitical risks. The profitability of euro area banks has improved, but the structural profitability problems that existed before the pandemic remain unresolved. This is also

reflected in the low valuation of European banks in stock markets compared to those of banks of other regions. In 2021, bank stock prices increased overall, but the correction experienced in the first quarter of 2022 affected them more than the stock market as a whole. Bank financing costs and CDS rates increased in the first four months of 2022.

The direct impact of the hostilities in Ukraine on the Nordic and Baltic economies and the financial sector is projected to be small overall. The impact of the second-round effects, as well as those brought by the shortage of commodities and deterioration of confidence is far less clear cut. The Baltic States and Finland have somewhat closer trade ties with Russia than European countries on average, but they have decreased significantly after Russia's annexation of Crimea. The confidence shocks in the countries of the region could be slightly higher, at the same time the participation of the Baltic States, Norway and Denmark in NATO, as well as the application for membership of the Alliance by Finland and Sweden have reduced the geopolitical risks. It is essential that the Nordic and Baltic banking sectors have a good resilience to shocks, and their key financial indicators are good and above the average of European banks (see Chart 1.3).

In response to the sharp increase in inflation, Sveriges Riksbank continues to reduce its securities purchases and announced about raising its policy rate to 0.25%. Financial conditions in Sweden have been tightening since the beginning of the year, reflecting expectations on the normalisation of the monetary policy and an increase in the overall uncertainty with regard to the war in Ukraine. The financing costs

Chart 1.3
MAIN FINANCIAL INDICATORS OF NORDIC, BALTIC AND EU BANKS
(at the end of 2021; sample of major banks; %)



for Swedish banks and borrowers have increased. Interest rates on new loans have also risen, but, for the time being, this has not affected the rapid lending dynamics. The credit risk assessment of Swedish banks remained low and the increase in CDS premium was moderate. Despite price fluctuations, the valuation of banks' shares remains broadly high.

The long-term potential vulnerability to financial stability in Sweden with regard to the unbalanced housing market development and the high household indebtedness continues on an upward path. Sweden is experiencing one of the fastest upswings in housing prices in Europe, and household indebtedness has reached new historical highs (see Box 1.1). Investment by major Swedish banks in the housing sector and commercial real estate is considered to be large. In order to reduce the excesses, the supervisory authority of Sweden has stepped up the macro-prudential measures that were eased at the beginning of the pandemic, as well as plans to maintain a requirement for a permanent neutral CCyB rate.

BOX 1.1 THE BUILD-UP OF CYCLICAL RISKS IN THE EURO AREA AND OTHER EUROPEAN COUNTRIES

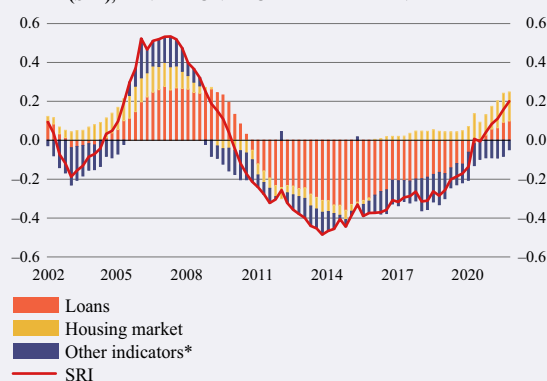
Despite the changing macro-financial environment, **cyclical risks have increased significantly in a number of the euro area and other European countries, mainly due to elevating imbalances in housing prices and household indebtedness.** Debts of NFCs have also increased and contributed to the development of the financial cycle. According to the ECB's assessment, **the systemic cyclical risk indicator in the euro area has reached its highest value since the global financial crisis** (see Chart 1.4). Still, its level is lower than in 2006–2007. Besides, the increase in the indicator at the beginning of the pandemic was partly influenced by so-called denominator effect due to the fall in GDP, e.g. in the loan-to-GDP component.

The demand for housing and financing for its acquisition has increased significantly over the last two years, contributing to activity and price increases in the housing market (see Chart 1.5). This was facilitated by several factors. First, in the context of the pandemic, behavioural change led to structural changes in demand, e.g. due to increased demand for larger housing or housing outside urban areas because of teleworking. Second, the deferred demand and substantial fiscal support, which was not always targeted at the most vulnerable groups of society, contributed to an increase in household savings. Third, in the context of low interest rates and pandemic, the eased supervisory requirements and credit standards provided relatively more favourable financing conditions for mortgage loans in a number of countries. At the same time, the supply of housing remained limited in various places, but the construction costs increased substantially. As a result, the housing prices have risen significantly. In the fourth quarter of 2021, housing prices in the euro area edged up on average by 9.5% quarter-on-quarter and by 16.0% compared with the beginning of 2020. Indeed, the dispersion of the rate of changes across the countries has been rather high. Given that recent years have seen housing prices rise faster than economic activity and wage indicators in several countries, their housing prices are becoming more excessive, increasing risks to financial stability.

The growing housing prices and rapid lending for house purchase raise concerns about a housing price-lending spiral and the increase in household indebtedness. The rapid developments in housing prices and loans are also observed in countries with high household indebtedness (see Chart 1.6); moreover, risks followed an upward trajectory already before the pandemic. In February 2022, a new ESRB assessment¹ was published on vulnerabilities in the EEC national housing markets, and several countries² received warnings regarding the increase in vulnerability and recommendations to implement particular measures aiming at mitigating those vulnerabilities.

The cyclical risk has also increased in Lithuania and Estonia. The pick-up in housing prices is also

Chart 1.4
THE SYSTEMIC CYCLICAL RISK INDICATOR IN THE EURO AREA (SRI), DEVIATION FROM THE MEDIAN



* Other indicators include the stock market, current account balance and debt servicing indicators.

Chart 1.5
HOUSING PRICES, LOANS FOR HOUSE PURCHASE AND HOUSEHOLD INDEBTEDNESS IN THE EURO AREA (%)

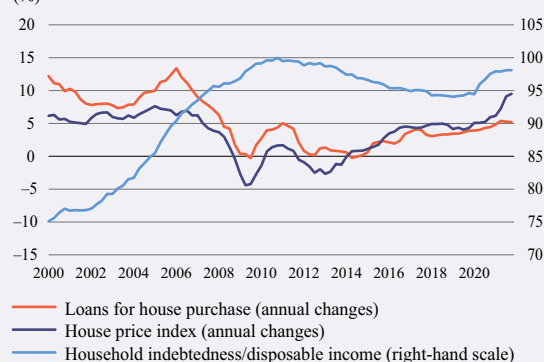
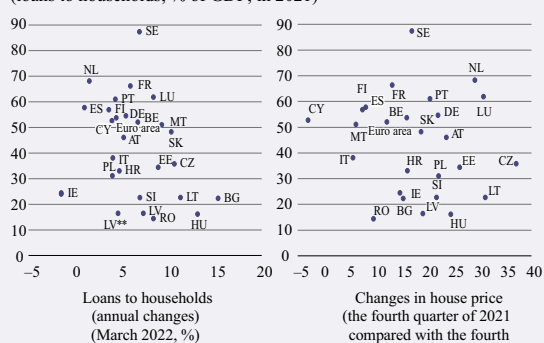


Chart 1.6
HOUSING PRICES AND LOANS TO HOUSEHOLDS* IN THE EU COUNTRIES
(loans to households; % of GDP; in 2021)



* The ECB data, excluding the one-off effects of loan write-offs, exchange rate fluctuations, reclassification, etc.

** Latvijas Banka's estimates, specifying details on one-off effects.

¹ [Vulnerabilities in the residential real estate sectors of the EEA countries.](#)

² Warnings were issued to Bulgaria, Croatia, Hungary, Liechtenstein and Slovakia, while recommendations were issued to Austria and Germany, which had already received warnings in 2016 and 2019 respectively.

accompanied by significant increases in housing loans. While household indebtedness levels in both countries are not excessive so far, further increases in household indebtedness in Estonia may contribute to higher household solvency risks.

Overall, imbalances in EU countries' housing markets have increased and risks to the adjustment of housing prices have grown. Indeed, future trends are very controversial. On the one hand, the deterioration in household solvency due to the increase in interest rates and the widespread rise in prices, as well as the uncertain and changing economic environment may weaken the demand. On the other hand, the demand continues to be maintained by structural changes linked to change of consumption patterns and a significant increase in the number of refugees. Moreover, the supply-side constraints and construction costs are mounting, contributing to the rise in housing prices. It is therefore important that a number of countries reduce barriers to the development of housing supply, as well as assess the role of fiscal and economic policy measures in the housing market. More and more countries are starting to take preventive macro-prudential policy measures to mitigate the medium-term cyclical risk and strengthen the resilience of the financial sector (see the section on the macro-prudential policy).

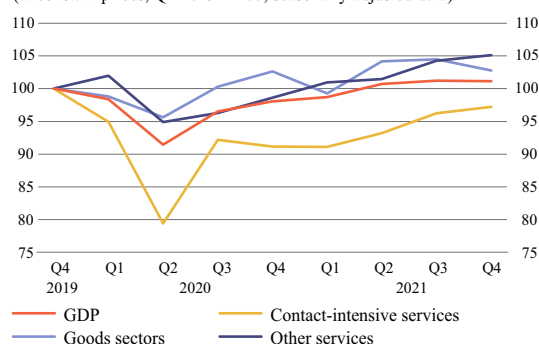
Domestic macrofinancial environment

- *The Russian invasion of Ukraine and its consequences have an adverse impact on the growth of the Latvian economy, and they contribute to inflation.*
- *The direct exposure of the Latvian economy and the financial sector to the countries involved in this war are generally limited. The main transmission channels are higher energy and other commodity prices, supply disruptions of imported raw materials and components, confidence deterioration and cutting the economic ties with Russia and Belarus.*
- *Government support will mitigate the impact of the war on the economy, while the country's fiscal indicators will also deteriorate.*

The impact of the pandemic on the economy and financial stability has proven to be much more limited than initially expected. This is mainly attributable to extensive support measures domestically and abroad, as well as the ability of households and businesses to adjust to the pandemic. In 2021, containment measures were³ in force for prolonged periods of time, while during the second half of the year the growth was slowed

³ The emergency situation was in force from 9 November 2020 to 6 April 2021, and from 11 October 2021 to 28 February 2022 due to the rapid spread of Covid-19 infection. Various restrictions were in force for the entire year, in particular for un-vaccinated individuals.

Chart 1.7
LATVIA'S GDP AND VALUE ADDED
(at constant prices; Q4 2019 = 100; seasonally adjusted data)



down by the lack of raw materials and rising costs. However, it was **already in the middle of 2021 that the Latvian economy reached the pre-pandemic levels, and in 2021 the GDP grew by 4.5%**. Nonetheless, the growth recovery was fragmented: in sectors mostly hit by restrictions the output was still considerably below the pre-pandemic levels (see Chart 1.7).

The warfare in Ukraine and the related escalation of the geopolitical situation have significantly increased the uncertainty and undermined growth perspective in Latvia and elsewhere. Less confidence, severing the economic ties with Russia and Belarus, slower growth in external markets, limited availability of commodities in global markets and higher prices, as well as the restructuring of delivery routes for imported raw materials and components will have an adverse effect on the growth of the Latvian economy (see Box 1.2).

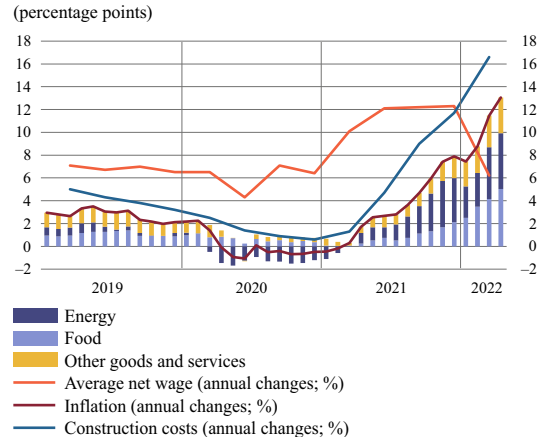
In the first quarter 2022, the GDP grew faster than expected, and it mitigated the risk of decreasing GDP in 2022. The effect of deteriorating confidence in the first quarter was mitigated by the manufacturing stocks accumulated during the previous year and higher consumption. It was further increased by easing the COVID-19 measures, consumer spending on assistance to Ukraine, as well as the arrival of Ukrainian refugees in Latvia. However, in general **the risks to the economic growth are still elevated.** According to June 2022 forecasts by Latvijas Banka, Latvia's GDP in 2022 and 2023 will grow by 2.9% and 2.4% respectively.

Disrupted supply chains, as well the increase in raw material and energy prices rapidly drove the inflation up as early as in 2021. The war in Ukraine has created new global supply challenges and additional pressure on the global energy and food prices. Thus, various costs (including construction and transportation costs) and consumption costs for goods and services have kept increasing, and there is a higher pressure on wages (see Chart 1.8). The high inflation will persist longer than expected, and the average annual inflation in 2022 could be as high as 14.8% (0.2% in 2020). Faster increase in food and energy prices has also been observed. The share of these expenses is particularly higher in the total spending of households with lower income. **The extensive and rapid increase in costs along with COVID-19 challenges that are still very much possible contribute to insolvency risks of borrowers and inequality in the country.**

Although the impact of the pandemic has been fragmented, **the restructuring of supply chains and the price increase resulting from the geopolitical challenges will affect all sectors of the economy to a greater or lesser extent.** The transport sector will also be greatly affected by the mobility programme.

Extensive rise in costs, supply chain disruptions and higher uncertainty can significantly hinder the implementation of current investment projects and deter from new investment. The investment environment is closely linked with the construction activity. Although a large influx of funds is expected both due to the Rail Baltica project, the Recovery and Resilience Facility, and the European Structural

Chart 1.8
ANNUAL CHANGES IN CPI AND ITS COMPONENTS, ANNUAL CHANGES IN AVERAGE NET WAGE AND IN CONSTRUCTION COSTS
(percentage points)



Funds, the rapid increase in construction costs, logistics challenges and the limited supply of construction materials can significantly hinder construction processes and increase the number of postponed investment projects.

Investment could be also affected by stricter financing conditions that, in turn, could be affected by the ECB direction towards gradual normalisation of the monetary policy, as well as deteriorating confidence due to the Russian aggression in Ukraine. Cautious investment and lending have already been the reality for recent years. In these circumstances, significant improvement in NFC lending is highly unlikely. At the same time, higher activity in the Latvian capital market is a positive sign.

The war in Ukraine brings energy independence and energy efficiency to the forefront. A positive stimulus to the investment environment could be provided by projects aimed at substituting the Russian gas, oil and other resources. Energy supply disruption risks and higher energy prices highlight the need to implement more energy efficiency measures, including intensification of real estate renovation projects as the current pace has been sluggish and inadequate.

In 2021, various support measures contributed to the budget deficit and the total sovereign debt. It is expected that in **2022, the budgetary expenditure will follow an upward trend, and borrowing in financial markets is planned due to the rapid increase in inflation and**

support during the energy pricing crisis, as well as to the Ukrainian refugees and companies to find new markets instead of Russia and Belarus (see Box 1.3).

The Latvian sovereign debt is not too excessive; however, the budgetary deficit and debt increase indicators are one of the highest in the EU. Furthermore, tighter

financial conditions increase the service costs of the sovereign debt. **The fiscal support should be more targeted and focus on improving the competitiveness of companies, more investment and more sustainable fiscal solutions.** To facilitate continued growth, we should focus not only on solving the current problems, but also on structural challenges.

BOX 1.2. EXPOSURE OF THE LATVIAN ECONOMY AND FINANCIAL SECTOR TO RUSSIA, BELARUS AND UKRAINE

The Russian invasion of Ukraine will adversely affect the economic recovery in the euro area, including Latvia, after the pandemic. The following transmission channels will have the most impact on the Latvian economy⁴:

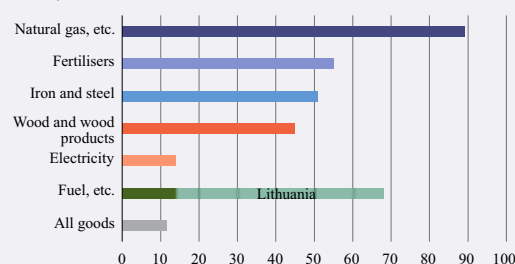
- severing the economic ties with Russia and Belarus;
- rerouting the supplies of imported raw materials and components from the countries involved in the war to other suppliers;
- faster increase in energy and other commodity prices;
- deteriorating confidence and growing insecurity in the region.

The main impact channels affecting the solvency of borrowers and investment environment will be related to more disruptions in supplies, higher energy and other commodity prices, and a confidence shock.

After the annexation of the Crimea by Russia in 2014, the dependence of the Latvian economy from the Russian and Belarusian markets has significantly decreased. In 2021, the exports of the Latvian goods and services to Russia, Belarus and Ukraine amounted to 7.9% of the total exports or 5.1% of the GDP (almost twice less than in 2014). Moreover, during the last five years the share of re-exported goods in export transactions with Russia and Belarus reached 34%⁵ and 54% respectively. The increase in the price of energy and timber in 2021 drove higher imports from Russia and Belarus, and the imports of goods and services from these countries and Ukraine amounted to 12.5% of the total imports. With regard to imports from Russia and Belarus, Latvia mostly imported raw materials, and Russia dominated the imports of fossil energy (see Chart 1.9). Thus, **the main challenges are related to reducing the energy dependency from Russia.** Alternative supplies in most cases are more expensive, while investment ensuring energy independence requires time and resources.

Direct investment by Latvian credit institutions in Russia, Belarus and Ukraine are quite small in general, and have significantly decreased since 2015 (see Chart 1.10). In some smaller credit institutions, they are not insignificant, but the contribution of these credit institutions to the total assets of the banking sector is negligible.

Chart 1.9
SHARE OF CERTAIN GOODS FROM RUSSIA* AND BELARUS IN IMPORTS OF THE RESPECTIVE GROUP OF GOODS (2021; %)



* To reflect imports of fuel of Russian origin, fuel imports from Lithuania have been added to those from Russia.

⁴ [Macroeconomic Developments Report \(March 2022\)](#), including [the box on the links between the Latvian economy and Russia, Belarus and Ukraine](#).

⁵ According to Latvijas Banka, re-exports to Russia could be underestimated, as company data on external trade do not identify re-exports, if after the imports of goods and before their exports inter-company transactions have taken place.

In March 2022, the share of investment in Russia, Belarus and Ukraine was 0.6%⁶ of the total assets of credit institutions (3.7% in 2015). They mostly include loans and a small amount of claims on credit institutions. Taking account also of the Credit Register data on the country risk transfer, the share of loans to Russia, Belarus and Ukraine was just 1.9% of the total loan portfolio of credit institutions. A large share of these loans were delinquent loans even before the war. Thus, it is not expected that this investment will have an additional significant negative effect on the overall loan portfolio.

Financing from Russia, Belarus and Ukraine (mostly deposits) amounted to 1.6% of the total assets of

credit institutions in March 2022 (5.9% in 2015), and 2.0% of the total deposits. It should be noted that the share of foreign deposits in the total deposits of Latvian credit institutions decreased from 53.4% in 2015 to 14.5% in March 2022.

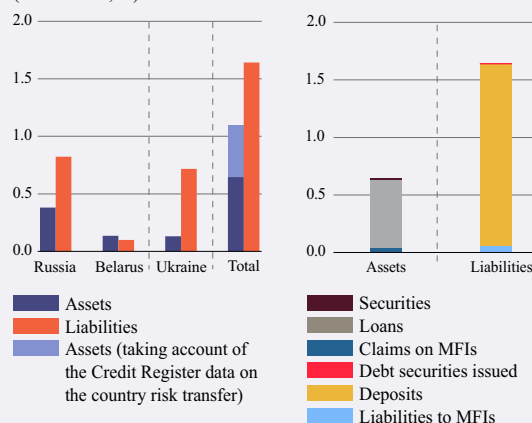
Investment by Latvian credit institutions in Russian, Belarusian and Ukrainian subsidiaries are very small: at the end of 2021, they amounted to less than 0.1% of total assets. Furthermore, **Russian and Belarusian share of the paid-up capital of Latvian credit institutions is also insignificant:** in March 2022, it amounted to 0.3% of the total paid-up capital of credit institutions. Two small credit institutions have a considerable share of the Ukrainian paid-up capital; however, it is still less than 50% of their paid-up capital.

Considering the limited direct exposure to countries involved in the war, **no significant direct impact of the war on the Latvian credit institutions can be observed.** At the same time, sanction compliance is a significant burden for the financial sector and businesses and hinders transactions that could be related to sanctioned areas and aggressor countries. Cyber risks have rapidly aggravated in Latvia and elsewhere, as well as the related potential payment disruption risks. However, critical incidents have not occurred in Latvia (see the Appendix on cyber security).

Nevertheless, the geopolitical situation may have an indirect effect on the profitability of credit institutions via the confidence and macroeconomic channels by adversely affecting the credit risk, profitability and lending to the economy. Overall, the resilience of credit institutions against shocks remained good (see the results of stress tests).

Direct investment by the non-bank financial sector in Russia and Ukraine is also small. According to the estimates of Latvijas Banka and the FCMC, at the end of 2021 investment by the 2nd and 3rd pillars of the pension scheme and by insurers in securities of Russian issuers amounted to less than 1% of the total amount. While in investment funds, the share of securities of Russian issuers was smaller than 5% of the total investment. Overall, the widespread uncertainty and volatility in the financial markets could even have a greater impact on the investment by the non-banking financial sector than the small share of investment in Russia and Ukraine.

Chart 1.10
THE SHARE OF ASSETS AND LIABILITIES IN RUSSIA, BELARUS AND UKRAINE IN THE TOTAL ASSETS OF LATVIAN CREDIT INSTITUTIONS
(March 2022; %)



⁶ 1.1% of the assets, including the Credit Register data on the country risk transfer (in line with the basis for risk transfer laid down in Appendix 11 to Latvijas Banka's Credit Register), and thus taking account of indirect exposure to the risk related to Russia, Belarus and Ukraine.

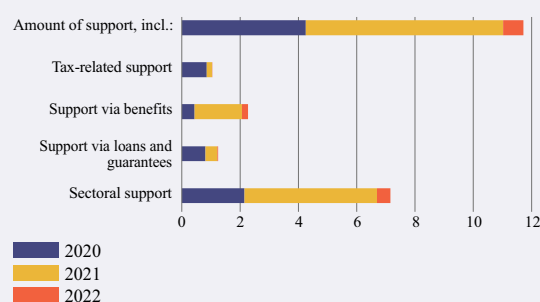
BOX 1.3. SUPPORT TO OVERCOME COVID-19 EFFECTS AND COMPENSATE ENERGY COSTS IN LATVIA

Support to overcome COVID-19 effects

Fiscal support significantly mitigated the negative effects of COVID-19 containment measures on the Latvian economy and solvency of borrowers⁷. In 2021, the share of government support significantly increased and reached 6.8% of GDP (4.3% in 2020; see Chart 1.11). Support to companies became more targeted overall, and the share of support measures contributing to debt accumulation (extension of tax deadlines, loans, loan guarantees) also decreased.

Meanwhile, the scope of one-off and non-targeted support increased for households, and in combination with other factors it was affected by the lack of a national system that would allow to quickly and efficiently grant targeted financial support to the most financially vulnerable societal groups.

Chart 1.11
GOVERNMENT SUPPORT MEASURES TO OVERCOME COVID-19 EFFECTS IN LATVIA
(% of GDP)



The government continues to financially support households and companies in 2022. Although most of the measures for mitigation of COVID-19 effects end during the first half of 2022, they are complemented by government support during the energy pricing crisis and measures that are related to the war in Ukraine. For example, to overcome the consequences of the pandemic, AS Attīstības finanšu institūcija Altum (hereinafter, Altum) will use the unused financing already allocated to specific financial instruments or the repaid budgetary financing for support measures to businesses affected by sanctions against Russia and the economic consequences of counter-measures to contribute to their re-orientation to other markets.

Government support to households increased and became more extensive contributing *inter alia* to the solvency of more well-off households. In 2021, the amount of support⁸ was 4.1 times larger than in 2020, and stood at 4.8% of the total 2021 household wages. The support allowed to mitigate the significant and long-term negative effects of the COVID-19 crisis on the household income in sectors suffering the greatest impact. However, the support was not very targeted⁹ and was also paid to households with high and increasing income during the pandemic.

The government support played an important role in solving the liquidity problems of companies and preventing a sharp increase in the number of insolvencies. Extension of tax deadlines, working capital subsidies and sectoral support in 2021 amounted to 4.7% of the GDP. Sectors mostly hit by the pandemic (like the accommodation and food service activities, arts, recreation and entertainment sectors) received the most intensive support (in terms of amount received per turnover in the corresponding sector). Sizeable support was also provided to shopping malls affected by the restrictions¹⁰. However, even sectors that did not suffer so

⁷ Credit payment moratoriums had a significant effect on mitigating the immediate economic impact of the pandemic and deteriorating solvency of borrowers. However, after the expiry of the single private moratorium in Latvia in the autumn of 2020 (due to low demand), the granted leniency periods have expired without any adverse effect on the quality of the credit portfolio of credit institutions.

⁸ EUR 533.5 million were paid as furlough benefits (until 30 June 2021), wage subsidies, support to the unemployed, incapacity benefits and bonuses, as well as one-off allowances for each child, senior and disabled individual in 2021.

⁹ 35% of all allowance amount paid in 2021 were one-off payments of EUR 500 for each child. This amount was paid to one of the parents irrespective of his/her income and its changes during the pandemic.

¹⁰ To compensate for the lost rental income, EUR 404.5 thousand were paid as one-off subsidies to shopping malls.

much and whose total deposits with credit institutions even increased received considerable support¹¹. During the third wave of the pandemic, a list of sectors¹², whose activity was not affected by the national lockdown measures and that were not eligible for support came into force. During the third wave, sectors mostly affected by the crisis (see Chart 1.2) that were still financially vulnerable received the most intensive support mitigating their insolvency risks.

As the economy adjusted to the pandemic, financial instruments offered by Altum to mitigate the consequences of the pandemic, including loan guarantees and loans, became less popular in 2021. For example, in some euro area countries credit

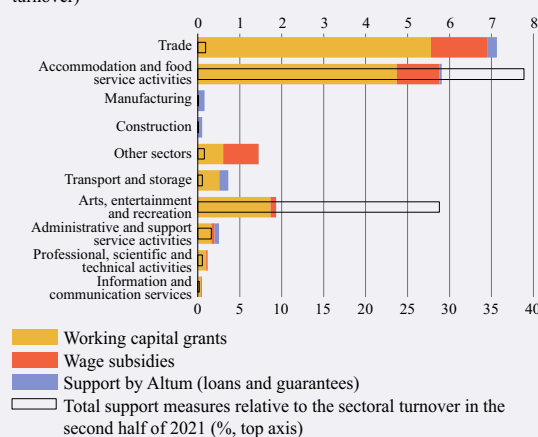
guarantees played an important role in supporting borrowers, but in Latvia there was close to no interest in such guarantees in 2021. Furthermore, the demand for Altum working capital loans that provide liquidity support to pandemic-stricken companies has significantly decreased. Approximately only one third of the available financing in Altum investment fund has been used so far.

Support for compensation of energy costs

The government support has a significant, yet temporary effect on mitigating the increasing impact of energy costs on borrowers, as most approved support measures expire at the end of this year's heating season. Most support was allocated to natural persons¹³. The total amount paid for all support measures amounts to 1.3% of 2021 GDP, and it is comparable to 17% of the household expenditure for housing, electricity, water, gas and other fuels in 2019¹⁴. It should be noted that the support is generally not targeted and was also paid to more well-off households¹⁵.

If energy prices remain high during the next heating season, less well-off individuals will require targeted support. Continuous government support to a large range of people to compensate for the increase in energy prices is fiscally unsustainable. Moreover, the use of environmentally unfriendly energy sources contravenes climate neutrality targets. **It would be more sustainable to develop alternative resources and improve energy efficiency.**

Chart 1.12
GOVERNMENT SUPPORT MEASURES FOR NON-FINANCIAL CORPORATIONS
(1 October 2021–20 March 2022; millions of euro; % of the sectoral turnover)



¹¹ <https://www.makroekonomika.lv/apaligakas-vai-pavisam-licsas-kadas-kluvusas-uznemumu-aprises-starp-majsedem-un-aktivu-rosibu>.

¹² <https://likumi.lv/ta/id/327300-grozijumi-ministru-kabineta-2020-gada-10-novembra-noteikumos-nr-676-noteikumi-par-atbalstu-covid-19-krizes-skartajiem-uznemumiem>.

¹³ The total amount of support measures was EUR 432.1 million. It mostly consisted of a compensation for electricity service costs to all end-users, as well as the monthly allowance to families with children, seniors, disabled individuals and vaccinated seniors.

¹⁴ According to a survey of household budgets conducted by the CSB, households included in this expenditure group spent 14.6% of their total expenditure, while the total final expenditure of households in 2019 was EUR 17.4 billion. The comparison was made with household expenditure, as the largest share of the support was paid to households. Part of the support (e.g. distribution tariffs and mandatory purchasing component reduction) benefits was provided to all end-users.

¹⁵ Most support was paid to individuals irrespective of their income level.

Financial vulnerability of borrowers

- Before the Russian war in Ukraine, the overall solvency of households and NFCs was good; however, the financial vulnerability of NFCs most directly affected by the pandemic and less well-off households is still elevated.
- Higher inflation, as well as raw material supply disruptions have a detrimental effect on financial health of some borrowers.

Household solvency

Before the war in Ukraine, the financial situation of Latvian households kept improving. In 2021, the total wage bill increased by 8.9%, while consumer prices by 3.3%¹⁶. The share of job seekers gradually decreased (to 7.1% at the end of 2021), while the registered unemployment rate decreased to 6.5% in April 2022. Household deposits with credit institutions continued to gradually increase, and in April 2022 they were 9.0% higher than a year ago¹⁷. At the same time, household debt increased only moderately: by 3.8%¹⁸ year-on-year, mostly due to growing mortgage lending.

The household indebtedness and interest burden are small, and the payment discipline is good. The household debt¹⁹-to-GDP ratio is one of the lowest in the EU (at the end of 2021: 19.1%, at the end of 2019: 19.6%). Household interest payments are small (in 2021, the MFI was 0.54% of GDP, and for non-banking creditor: 0.34% of GDP). The gap between the calculated and recognised interest income keeps decreasing and is small (see Chart 1.13).

The pandemic and the heterogeneous increase in consumer prices have an uneven effect on household solvency. In 2021, employment in the low-wage group continued to decrease (see Chart 1.14). Furthermore,

Chart 1.13
HOUSEHOLD INTEREST PAYMENTS TO MFIS AND THE GAP BETWEEN THE CALCULATED AND RECOGNISED INTEREST PAYMENTS (% of GDP)

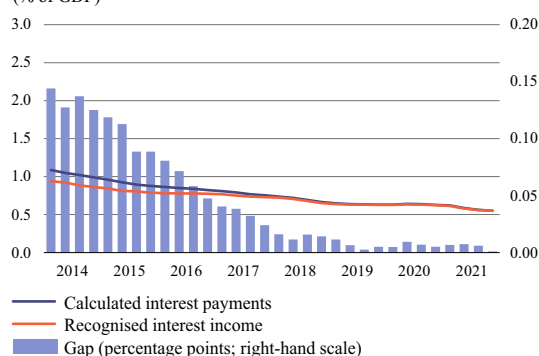


Chart 1.14
ANNUAL CHANGES IN EMPLOYMENT IN VARIOUS INCOME GROUPS (%)

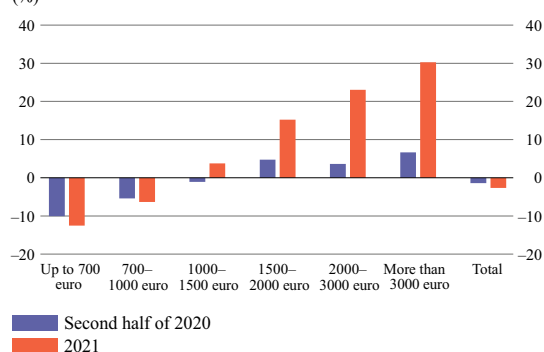
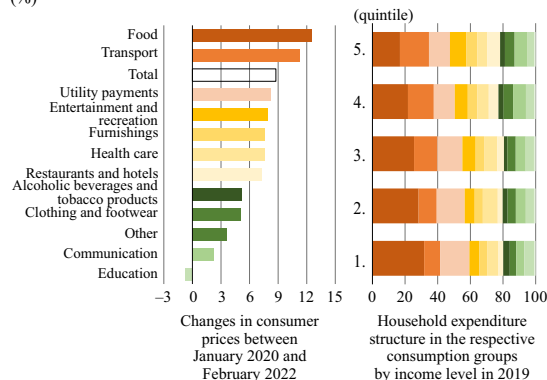


Chart 1.15
CHANGES IN CONSUMER PRICES AND THE STRUCTURE OF HOUSEHOLD EXPENDITURE IN THE RESPECTIVE CONSUMER GROUPS (%)



since February 2020 the price of food products and utilities – the largest consumption item in less well-off households – has increased faster (see Chart 1.15). Government support measures to overcome the COVID-19 crisis and to compensate the increasing costs of energy have not been targeted. They have improved the solvency of both less well-off and well-off households (see Box 1.3).

¹⁶ During the second half of 2021, the price increased faster, but still slower than the total wage bill.

¹⁷ Household deposits also continued to increase in March.

¹⁸ Excluding the one-off effects due to structural changes in the banking sector and re-classification of sectors.

¹⁹ Debt to MFIs, leasing companies and other non-banking players (except leasing companies).

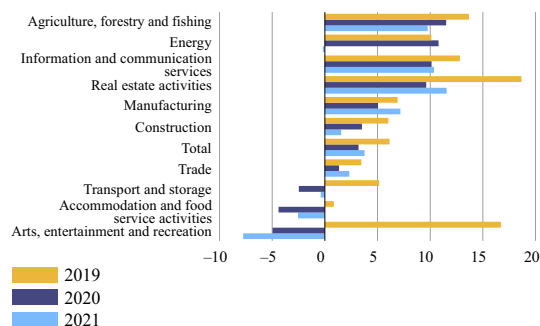
The warfare in Ukraine has a negative effect on household solvency, as it has caused a faster rise in energy, goods and general consumer prices (see Appendix 2). In April 2022, the price increase accelerated²⁰ and already outrun the growth rate of the wage bill. Supply disruptions and price increase of raw materials will undermine the accessibility of new housing. To mitigate the negative effects, targeted support is needed for less well-off population groups.

NFC solvency

In 2021, the general financial situation of NFCs significantly improved. In 2020, the total turnover of NFCs decreased (by 7.1%), while in 2021 it increased (by 19.0%). The growth was driven not only by the price hikes, but also by the general ability of NFCs to adjust to the pandemic. The turnover increased in all sectors, excluding the accommodation and food service activities sector where it remained low, as well as the arts and entertainment sectors where it further decreased by 16.7% in 2021²¹.

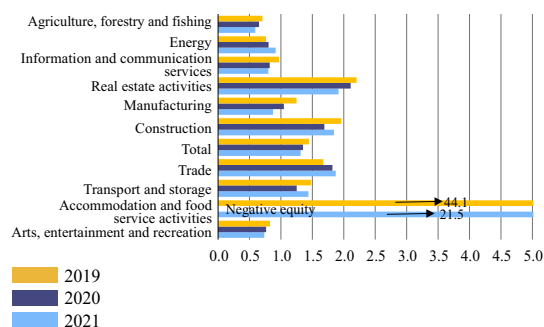
The financial soundness of NFCs most directly hit by the pandemic have been deteriorating for a long time. The arts and entertainment, accommodation and food service activities sectors, as well as the transportation sector have incurred losses for the second consecutive year (see Chart 1.16). In the transportation sector, the recovery will be further hindered by the increase in costs due to the mobility package²², the war initiated by Russia and the sanctions that will potentially adversely affect railway carriage and ports. The war in Ukraine and sanctions will also cut tourist flows from Russia and Belarus, and potentially also from other countries eventually delaying the recovery of the accommodation and food service activities sector.

Chart 1.16
NFC PROFITABILITY
(%)



Note: The ratio of pre-tax profit to turnover in the respective sector and period.

Chart 1.17
NFC DEBT-TO-EQUITY RATIO
(number of times)



The financial resilience of NFCs during the pandemic was boosted by government support measures and additional capital investment by owners. In 2021, the total debt of NFCs decreased²³, while the equity increased by 7.9% (mostly due to an increase in stocks and share capital). The debt-to-equity ratio of NFCs improved (see Chart 1.17), and in 2021 it was even lower than in 2019 in all sectors, except the retail and energy sectors, where the increase of the total NFCs debt was faster in 2021 (9.3% and 10.7% respectively) than the equity changes (6.2% and -2.8%).

As the profitability gradually increased and the debt decreased, the NFCs improved their ability to service debts in 2021. However, the rapid increase in energy prices will considerably increase the production and material costs of NFCs and cut down on profits (see Box 1.4). Supply disruptions

²⁰ Up to 13% in comparison to April 2021.

²¹ In 2020, the turnover of this sector had already decreased (by 42.1%).

²² As of 21 February 2022, carriers have to ensure that their vehicles used for international transport return to the country of their establishment no later than in eight weeks after their departure. There are additional restrictions in place for cabotage.

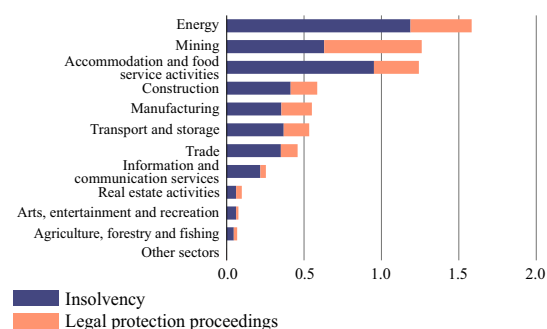
²³ In the third quarter 2021, the total NFC debt to credit institutions, NFCs, households and other financial intermediaries reached 50.1% of the GDP that is much less than at the end of 2020 (55.6% of the GDP). The decrease was driven by the GDP growth, as well as a small reduction of the total debt.

will mostly affect NFCs active in the construction (mainly due to the supply of metal raw materials), manufacturing (in particular, metalworking and machinery subsectors), agricultural (due to fertiliser supply problems) and car sales sectors. NFCs with the largest share of their markets in Russia and Belarus may experience a faster decrease in their profitability (e.g. profitability of some companies in the machinery, chemicals and pharmaceutical sectors).

Higher energy prices, supply disruptions and increasing uncertainty will also hinder the NFC investment growth. This means that loan demand from NFCs will likely decrease.

Financial vulnerability and insolvency risks are still high in the sectors most directly affected by the pandemic. It also means that there is a limited ability to absorb a significant increase in costs of commodities and materials without any insolvency risk. State support and the measures introduced to combat the pandemic²⁴ have prevented a significant increase in the number of insolvency cases in sectors mostly affected by the crisis (see Chart 1.18). The number of such cases in the sectors weakened by the pandemic is likely to rise as a result of the cost increase shock. **To prevent a rapid growth in the number of insolvency**

Chart 1.18
SHARE OF THE NUMBER OF INSOLVENCY AND LEGAL PROTECTION PROCEEDINGS INITIATED FROM 1 MARCH 2020 TO 18 MARCH 2022 VIS-À-VIS LEGAL PERSONS AS A SHARE OF THE TOTAL NUMBER OF LEGAL PERSONS IN THE COUNTRY IN THE RESPECTIVE SECTOR (%)



cases, it is important to improve financial literacy of NFCs: the ability to detect and solve insolvency problems on a timely basis.

²⁴ On 21 March 2020, a ban was put in place for the creditors to submit insolvency applications for legal entities until 1 September 2020, including to ensure legal and financial stability. This ban was repeatedly prolonged until 1 September 2021. <https://likumi.lv/ta/id/315287-covid19-infekcijas-izplatibas-seku-parvaresanas-likums>

However, the number of insolvency applications of legal entities did not significantly increase when the ban was lifted.

BOX 1.4. IMPACT OF THE SHOCK OF RISING PRODUCTION AND MATERIAL COSTS ON THE ABILITY OF VULNERABLE NFCs TO SERVICE THEIR DEBTS TO CREDIT INSTITUTIONS

Businesses have experienced a significant increase in the production and material costs due to rising energy prices and supply disruptions. The war in Ukraine and its global consequences drive up the pressure on costs. The box assesses how increased costs affect the NFC profit and the ability to service their debts to credit institutions. NFCs made vulnerable by the cost increase were identified, and their debt amount to credit institutions were calculated. It was concluded that the number of NFCs made vulnerable by the rising prices and their total debt stock have grown and become significant. However, most of this loan stock consists of loans issued to vulnerable NFCs that suffer liquidity problems due to higher costs, but no immediate and significant solvency problems.

Impact of production and material costs on NFC profit

Higher energy prices and supply chain disruptions have significantly increased the production and material costs of NFCs²⁵. In the fourth quarter of 2021, they had elevated by 28.3% year-on-year. **Moreover, the share of production and material costs in the total NFC turnover has rapidly climbed and reached record highs** (see Chart 1.19). It suggests that NFCs had not passed the entire cost hike to end prices and/or significantly cut other cost items, and their profits have decreased.

Historically, higher production and material costs have contributed to lower profit margins. According to a simplified analysis (see equation 1.1)²⁶, an increase by one percentage point of the costs to NFC turnover ratio has been historically²⁷ linked with a decrease in profit margins by 1/3 of a percentage point (see Chart 1.20). Profits in the transport sector, as well as the arts and entertainment sector have suffered the most due to higher costs.

Equation 1.1

$$\frac{EBIT_t}{Turnover_t} = \alpha + \beta \frac{Production\ and\ material\ costs_t}{Turnover_t} + e_t$$

The impact of higher costs on profit margins greatly differs in various sectors and depends on:

- the share of production and material costs of the total costs of NFCs (e.g. in the IT sector it is smaller and has a lesser, statistically insignificant, effect on profits);
- how quickly NFCs can pass the costs on the end prices (e.g. in the arts, entertainment and recreation sector the event cost estimates are prepared and the tickets are sold long in advance, thus, the rise in costs can no longer be fully compensated already in the same quarter²⁸);
- ability to shift higher costs to consumer prices also due to the fact that the prices of NFC goods and services are regulated (e.g. passenger transportation tariffs) or NFCs have a very limited scope for increasing the prices (e.g. in the transport sector due to fierce competition and a decline in demand).

Chart 1.19
TOTAL NFC PRODUCTION AND MATERIAL COSTS
(annual changes and the share in turnover; %)

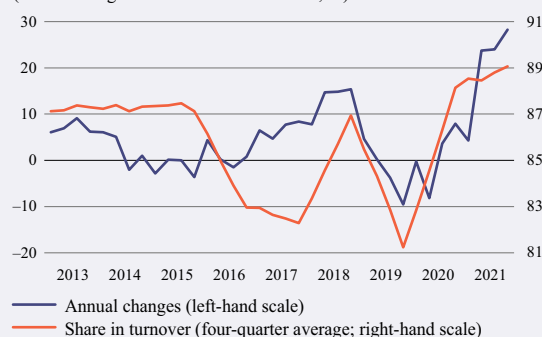
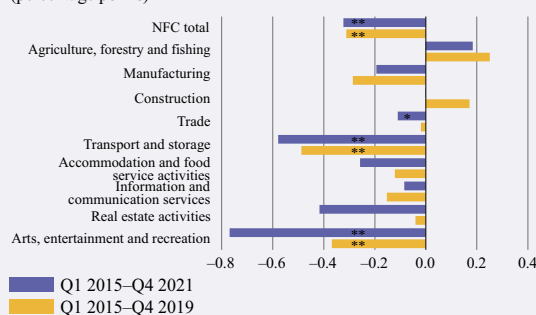


Chart 1.20
QUARTERLY CHANGES IN EBIT MARGINS IF THE SHARE OF PRODUCTION AND MATERIALS IN THE TURNOVER OF THE RESPECTIVE QUARTER HAS INCREASED BY ONE PERCENTAGE POINT
(percentage points)



* Statistically significant at the confidence level of 10%.
** Statistically significant at the confidence level of 1%.

²⁵ Data on NFC production and material costs from CSB survey on NFC profit and loss statements. The production and material costs of NFCs include all costs that are related to production and purchases of materials. Although they also include costs other than energy, the total costs demonstrate a high correlation with energy prices (such as oil prices). These costs are the main contributors to NFC costs, but do not include costs like administration and sales costs.

²⁶ The OLS regression model does not allow making conclusions on the causality but allows assessing the correlation between the costs and profit, and the statistical relevance.

²⁷ The period considered is from the first quarter 2015 to the fourth quarter 2021. The selected time period is long enough for a simplified regression analysis and is still able to demonstrate the current situation. The inclusion of the previous periods (before 2014) would not accurately reflect the current impact as after joining the euro area and due to 2014 sanctions against Russia part of NFCs changed their markets, operational models and suppliers. To verify the robustness of results, this period does not include the pandemic when some sectors experienced severe profit fluctuations.

²⁸ The analysis indicates that higher production and material costs in the arts, entertainment and recreation sectors have a considerably smaller effect in the next quarter than in the current quarter, although this effect is still statistically significant.

Sample of vulnerable NFC borrowers

Lower profits also affect the ability of NFCs to service their debts. To assess the sectors of vulnerable NFC borrowers and the value of their debts to credit institutions, an analysis of micro data was conducted on the basis of 2019 and 2020 annual reports of NFCs²⁹, as well as Credit Register data on credit liabilities of these NFCs.

Using 122.8 thousand annual reports submitted by NFCs to the SRS in 2020, the interest coverage ratio (ICR)³⁰ was calculated for each NFC. If the calculated ICR was lower than 1, the NFC was considered to be vulnerable (hereinafter, VNFC).

It should be noted that the ICR (as used in this analysis) also has drawbacks: it should be interpreted prudently and together with other NFC characteristics, such as the NFC sector and the ability to secure financing, e.g. from the parent company. Due to the lack of data, the ICR calculation still included depreciation of company assets³¹. Therefore, the amount of free cash flow available to NFCs during the respective period is not estimated in full, and the ability of NFCs to pay debts is not fully assessed. It should also be noted that the ICR should not always reflect solvency problems as a regular loan payment can be made from the accrued cash. In any case, ICR lower than 1 can point to NFC liquidity problems and the inability to pay debts during the respective period³².

The VNFCs that have borrowed from Latvian credit institutions were selected for analysis. In February 2022, there were 2864 such NFCs that were included in the sample of VNFC borrowers (hereinafter, VNFCB) to be analysed.

In addition, NFCs with loans from Latvian credit institutions that become vulnerable only after a cost increase shock were identified (hereinafter, VNFCB after a cost increase shock). There were 204 such NFCs. Thus, 3070 NFCs were selected and used for analysis: 2864 VNFCBs and 206 VNFCBs after a cost increase shock.

The cost increase shock in these sectors was determined on the basis of the current rate of increase in the production and material costs of NFCs, and their historical impact on profit margins in each sector, and also by assuming that in 2022 energy prices will remain high³³. In the transport sector, as well as the arts, entertainment and recreation sector the shock was set higher, assuming that the profit and ICR will decrease by 30% due to rising costs, while in other sectors the ICR shock was estimated to be at 15%.

Total liabilities of VNFCBs to credit institutions

Due to the pandemic, the number of VNFCBs and VNFCBs after the cost increase shock, as well as their total liabilities to credit institutions have significantly increased. In February 2022, the loan stock of

²⁹ According to the amendments to the Law on the Suppression of Consequences of the Spread of COVID-19 Infection, the deadline for submission of annual reports and consolidated annual reports was also extended in 2022. Thus, data from the latest annual reports for the analysis of a complete NFCs sample are available for 2020.

³⁰ The ratio of profits before interest and taxes to total interest payments (EBIT/I).

³¹ In the annual reports available in the source data, data on depreciation of fixed assets of NFCs are available for a much smaller number of NFC borrowers. Any analysis just of this NFC sample would be incomplete. To assess to what extent the results are affected by this particular item, a subsample of NFC borrowers with the largest debts to credit institutions was reviewed (see the detailed analysis below in this section); their annual reports and the respective notes on depreciation of fixed assets were analysed in detail.

³² A simplified analysis of regressions with data from the Credit Register and historical data from balance sheets also indicates that VNFCBs with ICR of less than 1 had a higher (and statistically significant) probability that at the end of 2018 they will have a non-performing loan or a past due loan within the next year.

³³ For ECB assumptions about oil prices and the impact of energy prices on the inflation rates, see https://www.ecb.europa.eu/pub/projections/html/ecb.projections202203_ecbstaff-44f998dfd7.en.html#toc7

VNFCBs constituted approximately 20% of the total domestic NFC loan portfolio of credit institutions, while the share of total loan stock of VNFCBs and VNFCBs after the cost increase shock was approximately 25% of the total domestic NFC credit portfolio of credit institutions (see Chart 1.21).

It should be noted that the financial situation of VNFCBs and VNFCBs after the cost increase shock before the pandemic was significantly better. According to 2019 financial results³⁴, the loan stock of VNFCBs in February 2022 constituted just 8.9% of the total domestic NFC loan portfolio.

Of loans issued by credit institutions to VNFCBs and VNFCBs after the cost increase shock, most were loans to the real estate sector. In 2020, this sector saw a significant increase in the number of VNFCBs and the share of their loan stock in the domestic NFC loan portfolio of credit institutions (see Chart 1.22). This result is mostly related to the negative effects of the pandemic in the commercial property segment. The financial situation of NFCs in the accommodation and food service activities, as well as in the transport sector also significantly deteriorated in 2020.

Most of the NFC borrowers in the accommodation and food service activities, as well as arts, entertainment and recreation sectors are vulnerable. In February 2022, the share of loans issued to VNFCBs and VNFCBs after the cost increase shock in the accommodation and food service activities sector was 84.5% of the loan balance in this sector (see Chart 1.23). In the arts, entertainment and recreation sector, this share was 85.0%, in the construction sector 52.0% and in the transport sector 40.3%.

Solvency analysis of the largest VNFCBs

To assess to what extent the potential liquidity problems of VNFCBs could undermine their solvency, detailed analysis of the largest borrowers was performed taking into consideration the drawbacks of the ICR indicator.

In February 2022, more than a half (51%) of the loan portfolio of 3070 VNFCBs was made up by loans to 30 largest VNFCBs. Their share of the total domestic NFC loan portfolio of credit institutions was 13.1%. Thus,

Chart 1.21
SHARE OF LOANS GRANTED TO VNFCB AND VNFCB AFTER THE COST INCREASE SHOCK IN THE TOTAL DOMESTIC NFC LOAN PORTFOLIO OF CREDIT INSTITUTIONS (February 2022; %)

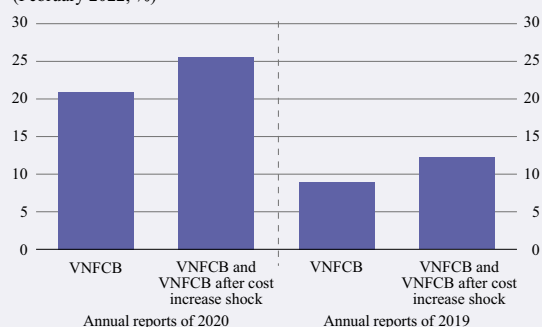


Chart 1.22
SHARE OF LOANS GRANTED TO VNFCB AND VNFCB AFTER THE COST INCREASE SHOCK IN THE TOTAL DOMESTIC LOAN PORTFOLIO OF CREDIT INSTITUTIONS BY SECTOR (February 2022; %)

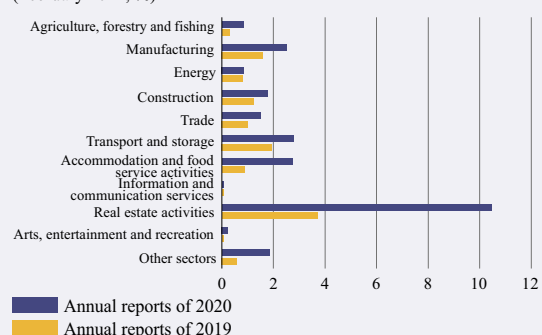
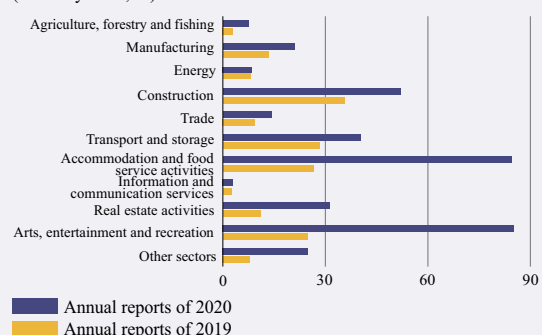


Chart 1.23
SHARE OF LOANS GRANTED TO VNFCB AND VNFCB AFTER THE COST INCREASE SHOCK IN THE LOANS GRANTED BY CREDIT INSTITUTIONS TO THE RESPECTIVE SECTOR (February 2022; %)



³⁴ 2019 annual reports of VNFCBs and VNFCBs after the cost increase shock were included. 2019 ICR was calculated for each of these NFCs. If the ICR was larger than 1 in 2019, the respective NFC was not vulnerable. By analogy, if the ICR was larger than 1 even after the cost increase shock, the respective NFC was not vulnerable in 2019 after the cost increase shock.

the review of the largest 30 VNFCBs provides a reliable insight into a large share of the overall VNFCBs loan portfolio.

30 largest VNFCBs include seven large shopping centres in Riga, six hotels, five lessors of office spaces, as well as various companies in the transport and manufacturing industries and other sectors that generally have a large volume of fixed assets. Respectively, the calculation of their profits is also affected by the calculation of depreciation of fixed assets. By excluding the depreciation of fixed assets from the ICR³⁵ and eventually taking into consideration the cash available to these NFCs, it was demonstrated that only 13 of these 30 VNFCBs were vulnerable. The share of the total loan stock of these 13 VNFCB in the total domestic NFC loan portfolio of credit institutions was 6.8%. A significant part of loans issued to these 13 borrowers consisted of loans to hotels.

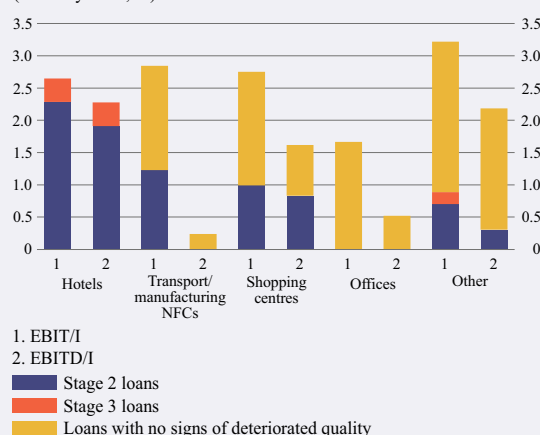
It should be noted that VNFCBs insolvency risks are mitigated by the following factors:

- the ownership structure of VNFCBs is generally diversified (various foundations and companies), and **they are capable of receiving liquidity support from the parent company;**
- the **solvency of shopping centres during the pandemic was boosted by government support measures:** disbursement of one-off subsidy. Moreover, as the spread of Covid-19 decreases and pandemic restrictive measures are gradually lifted, the financial results of shopping centres are likely to increase in 2022.

Thus, **a large part of the total loan portfolio of VNFCBs and VNFCBs after the cost increase shock consists of NFCs without significant immediate solvency problems.**

Chart 1.24 reflects the quality of loans granted to the largest VNFCBs and VNFCBs after the cost increase shock, as well as the share of these loans in the credit institutions' loan portfolio by sector and depending on the method for calculating the ICR (in the columns to the left – according to the EBIT/I method (i.e. without excluding fixed asset depreciation) and in the columns to the right – according to the EBITD/I method (excluding fixed asset depreciation)). **44% of the loans granted to 30 largest VNFCB have a deteriorated or bad quality.** Meanwhile, 50% of the loans issued to the 13 largest NFCs identified using the EBITD/I method are of deteriorated or bad loan quality.

Chart 1.24
SHARE OF LOANS GRANTED TO THE LARGEST VNFCB AND VNFCB AFTER THE COST INCREASE SHOCK IN THE TOTAL DOMESTIC NFC LOAN PORTFOLIO OF CREDIT INSTITUTIONS AND BREAKDOWN BY LOAN QUALITY AND BY ICR CALCULATION METHOD
(February 2022; %)



The negative effect of the pandemic on the hotel sector has been long-lasting. The war in Ukraine and the general price hike has created additional shocks in this sector. **The insolvency risk in this segment is high:** the quality of almost all loans issued to VNFCBs in this segment has already deteriorated.

Conclusions

As a result of the war started by Russia, production and material costs will continue to increase, thus, profit margins will decrease and the ability of NFCs to service debts will deteriorate.

³⁵ Data on depreciation of fixed assets were extracted from the detailed annual reports of borrowers. The formula for calculating the ICR without fixed asset depreciation is as follows: earnings before interest, taxes and depreciation to interest payments (EBITD/I).

The number of VNFCBs and their total loan stock significantly increased as a result of the pandemic. Loans to these companies already constitute a major part of the total NFC loan portfolio of credit institutions. The largest part of the total VNFCB loan portfolio consists of the loan balance of VNFCBs in the real estate sector (shopping centres and hotels). While loans to VNFCBs in the accommodation and food service activities, as well as arts, entertainment and recreation sectors constitute the largest share of the total NFC loan balance in the respective sector (yet the amount of loans issued to these sectors is small).

VNFCBs have significant liquidity risks. Furthermore, a large part of loans issued to them already have a deteriorated quality. Still, NFC vulnerability does not mean insolvency. A significant part of loans issued to VNFCs include loans to NFCs that face liquidity problems due to cost increase, but no immediate insolvency problems.

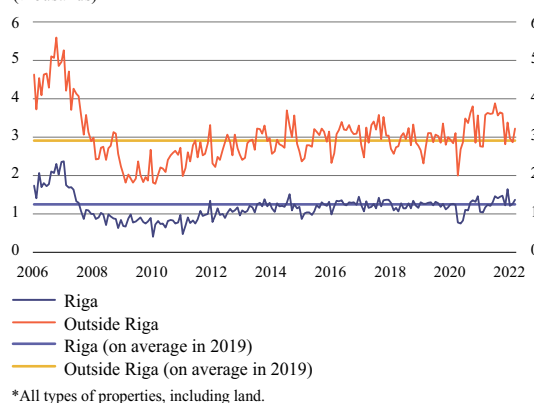
Real estate market development

- Activity in the real estate market remains high. At the same time, the supply of new housing is insufficient and decreasing. Further increase in construction costs and supply disruptions of building materials will reduce housing supply even more and will accelerate the already swift house price growth.
- Rising energy prices push up the costs for tenants of commercial properties and deteriorates their purchasing power. Demand for energy inefficient properties is decreasing in the commercial property market.
- Supply disruptions of building materials and their rising prices hinder the completion of commercial properties and implementation of new projects. The uptrend in construction costs will drive up rent rates in newly built commercial properties.
- The hotel segment still faces high insolvency risks.

Residential real estate market

Activity in the Latvian real estate market is high: in 2021 and the first two months of 2022, the number of real estate purchases increased both in regions and in Riga (see Chart 1.25) in the segments of existing and new apartments³⁶, as well as in the segment of

Chart 1.25
NUMBER OF PURCHASE CONTRACTS REGISTERED IN THE LAND REGISTER PER MONTH*
(thousands)



private houses³⁷. The number of land plot purchases for construction of individual dwellings also increased³⁸. **The war in Ukraine has had a temporary and insignificant effect on the activity in the real estate market.** In March 2022, the number of purchases was 3.4% lower than in March 2021 but 14.4% higher than in March 2019. The activity was supported by higher income and savings of a part of households, as well as the government support programme for families with children³⁹.

Meanwhile, on the supply side the development was much weaker: in 2021, the construction of new housing continued to slow down (see Chart 1.26).

³⁶ According to SIA LATIO, in 2021 the total number of transactions of apartments in Latvia increased by 16%, while the number of reservations of new apartments by approximately 15%.

³⁷ According to SIA LATIO, the number of transactions of private houses increased by 10%.

³⁸ According to the data from the State Unified Computerised Land Register – by 16%.

³⁹ According to the data from the Credit Register and the State Unified Computerised Land Register, the share of new mortgages in the total number of dwelling purchases was 40.2% in 2021.

According to the CSB data, the total dwelling space of new housing commissioned in 2021 in Latvia was 23.2% smaller than in 2020. In accordance with Colliers International Advisors, **the number of available and completed new apartments in Riga has reached the 10-year historical low.** Like elsewhere in Europe, the construction activity was hindered by a rapid increase in construction costs and disruptions of supplies of building materials.

To improve the supply of available and qualitative housing, several structural deficiencies (e.g. bureaucratic obstacles to construction⁴⁰, shadow economy, lack of adequately skilled labour in regions) have to be rectified. Construction of new housing in Latvia has been lagging behind Lithuania and Estonia for a sustained period of time (see Chart 1.27). Faster growth of housing construction is also hindered by lower purchasing power than in the neighbouring countries⁴¹.

Housing prices are increasing faster. The price increase was further aggravated by an imbalance between supply and demand in the market: if there is high purchasing activity and small supply of new housing, there is also an increasing demand for existing housing that drives up prices in this segment. According to the CSB, the prices of existing dwellings increased by 14.2% in 2021, while dwelling prices in general rose by 11.0%. The price hikes accelerated during the year, and in the fourth quarter 2021 the price of existing dwellings was 21.2% higher year-on-year, while overall dwelling prices were 16.5% higher than a year ago.

However, **housing price dynamics in countries with a rather small and fragmented real estate market (like the Latvian one) can be affected by a change in the market transaction structure.** In the fourth quarter 2021, the share of transactions of larger existing apartments and private houses significantly increased

⁴⁰ According to real estate developers, the time required for approving the construction documentation in Riga is significantly longer than in Vilnius and Tallinn.

⁴¹ Several large real estate developers that operate in Latvia also operate in Lithuania and Estonia where the average housing price and wages are significantly higher. From this point of view, developers have more incentives to channel a larger part of their investments to these markets.

Chart 1.26
NEW COMMISSIONED HOUSING AND ISSUED BUILDING PERMITS
(thousands of m²)

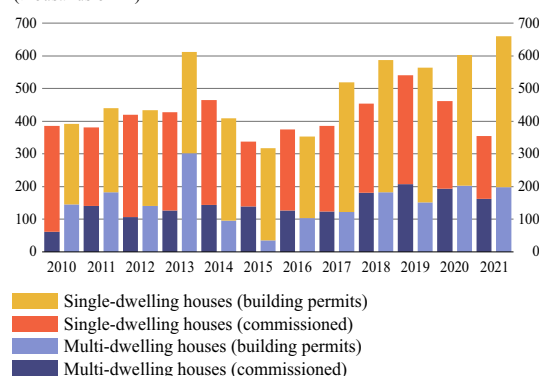
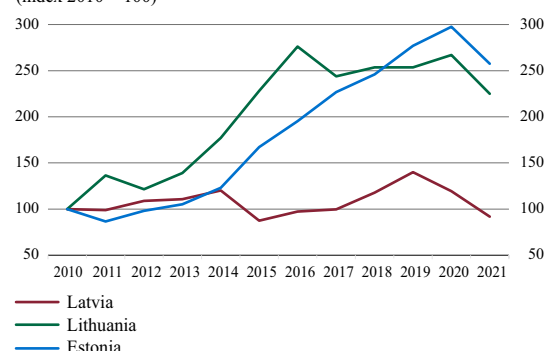


Chart 1.27
TOTAL AREA OF NEW SINGLE-DWELLING AND MULTI-DWELLING HOUSES IN THE BALTIC STATES
(index 2010 = 100)



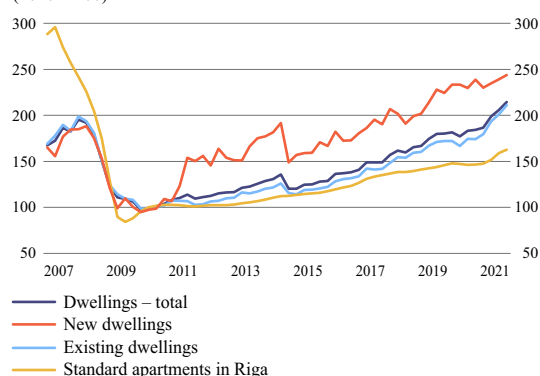
in the areas with a higher price level that could have contributed to a faster pickup in the index value. The impact of changes in the market transaction structure is smaller if the price hikes are calculated in specific market segments. According to information made public by real estate companies, a price increase in the largest market segments was much more moderate: in Riga, the price of standard apartments was 11.1% higher year-on-year⁴² (see Chart 1.28).

According to the CSB data, the price of new dwellings increased by 1.3% in 2021. This comparatively slow growth is attributable to the time lag between dwelling reservation and completion of the purchase and booking it in statistics: the 2021 pricing index also partly reflected reservations made as long as 12–18 months ago. According to SIA LATIO, some developers of new projects continued to increase reservation prices in 2021.

⁴² SIA LATIO, SIA Ober Haus Real Estate Latvia and SIA ARCO REAL ESTATE.

The war in Ukraine and sanctions adversely affect supplies of building materials (availability of metals the most) **and construction costs, thus, the availability of new housing will continue to deteriorate.** Slow construction of new housing means that the price of in-use housing will likely increase. After the outbreak of the war, energy prices have mounted even faster underlining the need to improve energy efficiency of buildings (see Box 1.5).

Chart 1.28
CSB HOUSING PRICE INDEX AND THE AVERAGE PRICE INDEX OF REAL ESTATE COMPANIES FOR STANDARD APARTMENTS IN RIGA
(2010 = 100)



BOX 1.5. HOUSING RENOVATION: A SUSTAINABLE SOLUTION TO THE ADVERSE EFFECTS OF RISING ENERGY PRICES

Due to the war, energy prices have increased significantly. It is projected that they will also be high during the next heating season. The global commitment to reduce emissions substantially, including in Latvia and in the EU, by 55% until 2030⁴³ means that the upward pressure on environmentally unfriendly energy prices will continue in the medium term. Thus, facilitation of a higher renovation rate is a more sustainable solution than government support to compensate for higher heating tariffs. So far, housing renovation has been very slow. To increase its intensity, a more streamlined, predictable and even across time planning of public funding for renovation as well as a more responsive communication on its availability, a more active engagement of the private sector in financing and implementing renovation projects and raising awareness about the benefits of renovation among the population are needed.

Better energy efficiency of standard apartment blocks would ensure sizeable benefits to a wide range of population. The dwelling space of standard apartment blocks make up the largest share of overall dwelling space.⁴⁴ These are the most occupied buildings⁴⁵ and their energy efficiency can be significantly improved⁴⁶: after the implementation of renovation and insulation projects energy consumption of buildings has decreased by 60–70%.⁴⁷ It is important to note that it is almost impossible to avoid investment in these buildings as a large share of standard buildings will have their average lifetime ending during the next 10 to 20 years⁴⁸. So far, renovation has been very slow: since 2009, only approximately 3%⁴⁹ of all apartment blocks have been renovated with the support of European funds.

⁴³ See the description of objectives of Latvia and other EU Member States *vis-à-vis* the Fit for 55 programme. https://ec.europa.eu/commission/presscorner/detail/lv/ip_21_3541.

⁴⁴ According to the State Land Service, the share of apartment buildings with at least three apartments was 57% of the total dwelling space at the end of 2019.

⁴⁵ According to a housing survey by the CSB, in 2021 more than 80% of standard apartment buildings were inhabited. The occupancy rate of buildings constructed before World War II and new buildings was smaller.

⁴⁶ Standard apartment blocks were constructed when energy efficiency requirements were lax, and in most cases their energy efficiency is at least twice as low as that of new apartment buildings.

⁴⁷ See, e.g. data from Altum apartment block renovation programme: <https://www.altum.lv/lv/pakalpojumi/maju-energoefektivitate-1/daudzdzivoklu-maju-energoefektivitate-pamatinformacija/dzivoklu-maju-renovacija/13244/>

⁴⁸ The lifetime of buildings can differ depending on the wear and tear, however, regulations on surveying, maintaining, regular repairs and minimum energy efficiency determine the average service time of standard apartment blocks, see <https://likumi.lv/ta/id/218831#piel>

⁴⁹ By the end of 2021, renovation was completed in 1029 buildings and is still ongoing in 98 buildings.

National and EU support to renovation of buildings is very fragmented and hinders active and continuous renovation. The state support programmes for building renovation (with EU cofinancing) are available irregularly⁵⁰, and information about their availability is not provided publicly in due time and proactively. Timely communication and streamlined uptake of funds is particularly important in situations when it is expected that the problems of building material supply chains will aggravate.

As elsewhere in Europe, state financing for the renovation of the housing stock is not sufficient, and the private sector also needs to be involved to a greater extent. The amount allocated to renovation of buildings in the Recovery fund and the EU multi-annual 2021–2027 budget will allow renovating just approximately 1000 residential buildings⁵¹ (although 38.6 thousand apartment blocks would have to be renovated in Latvia). To increase the renovation rate, energy service companies (ESCO)⁵² would also have to be involved. So far, more active involvement of ESCO was hindered by irregular financing, residents shying away from long-term financial commitments and lack of information about how these companies operate.

To achieve higher insulation and renovation rates, it is very important to raise awareness among the population about the renovation process and its benefits. To renovate apartment blocks, a majority of residents has to support it, and quite often renovation cannot proceed as the residents cannot agree: a large part of residents lack understanding of the benefits of renovation.⁵³

⁵⁰ For example, the previous Altum energy efficiency improvement framework programme for apartment block houses ended on 18 December 2020, and the new programme has not yet been announced <https://www.altum.lv/lv/pakalpojumi/maju-energoefektivitate-1/daudzdzivoklu-maju-energoefektivitate-pamatinformacija/dzivoklu-maju-renovacija/>

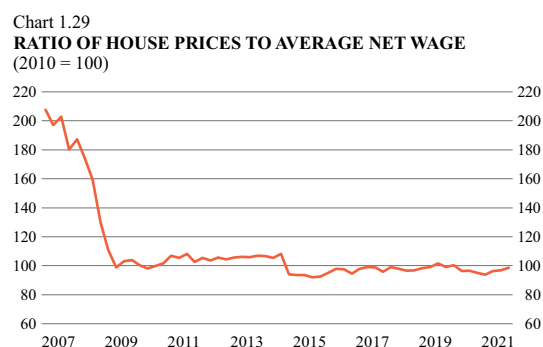
⁵¹ The Recovery fund has allocated EUR 57.3 million to improving energy efficiency of apartment blocks in Latvia, and additional EUR 163.1 million have been allocated to increase energy efficiency in buildings from the EU multi-annual budget.

⁵² They perform the initial assessment of the property to find the best energy efficiency solution. Then, they renovate the building and maintain it for a specific period of time (approximately 20 years) to recover their costs. To ensure that cooperation is mutually beneficial, ESCOs usually enter into a terminated service agreement with customers, e.g. a cooperative of apartment owners or the management company. During this agreement, energy services companies undertake any and all liability for preparing energy efficiency measures, financing, implementation of projects and maintenance guaranteeing the planned energy efficiency results.

⁵³ A survey of apartment owners in apartment blocks carried out by Riga Technical University and the research centre SKDS demonstrates that awareness of the insulation process is one of the key factors that correlates with the eagerness to renovate and insulate. https://videsinatne.rtu.lv/wp-content/uploads/2021/04/VPP_EEricibpolitika_GBa%C5%BEbauers_2_20_04_2021.pdf

Although real estate prices have increased significantly, and the activity in the housing market is high, housing market cannot be described as overheated yet. The prices are increasing from a low starting point: according to SIA ARCO REAL ESTATE, the average price of 1 m² in the secondary apartment market at the beginning of 2022 was EUR 920, while in 2007 it was EUR 1620. The availability of housing has slightly deteriorated, but it is still historically high (see Chart 1.29). The number of housing purchases in Latvia is much smaller than in Estonia and Lithuania, and also much smaller than in 2007 when the market was overheated (see Chart 1.30).

During the pandemic, the share of recurring/speculative transactions has not increased and remains low: the share of transactions with the same property during one year was just 3.8% of the total



number of recurring transactions in 2021 (see Chart 1.31). However, we should closely monitor to what extent the war in Ukraine and its global consequences will affect the supply of new housing and its price.

Part of recurring transactions (1.8% of all transactions) involved resale for a price that was 20% higher than the original price (this might mean that the housing

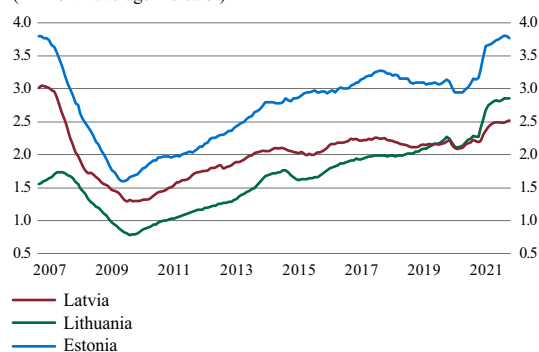
was renovated or otherwise improved, or the housing could have been purchased for a price that was below the market price). A small part of these properties (1.1%) was resold for a price that exceeded the initial price for less than 20% (this might mean that the housing was resold without any added value). The share of recurring transactions did not significantly increase during the two-year period either. In 2020 and 2021, only 5.8% of all transactions were recurring, while in 2018 and 2019 and in 2016 and 2017 the share was 5.3% and 5.5% respectively.

The war in Ukraine and its global consequences have not had a significant effect on the Latvian rental market so far. According to Cenu Banka, the number of rental offers and their average price did not significantly change in March 2022. However, a further influx of the Ukrainian refugees may increase demand in the rental market. So far, most Ukrainians who have arrived to Latvia having fled the war have been housed in tourist facilities or stay with their relatives and friends. Further impact on the rental market depends on the intensity of the refugee flow and on the state support for refugee accommodation.

Currently, an activity in the Latvian residential real estate market is not boyant, and price correction risks are low. Consequently, residential real estate risks do not pose major risks to the financial stability. **Though, providing imbalance between demand and supply in the residential real estate market continues to increase and mortgage lending accelerates, incentives offered by state support programmes should be reviewed:**

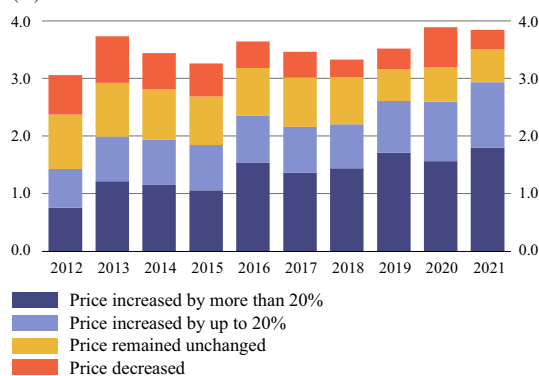
- it would be necessary to limit the programme only for the purchase of the first dwelling (the core aim of the programme is to help to purchase the primary dwelling);
- in order to reduce incentives to use the programme by borrowers that actually do not need any guarantees it would be necessary to:
 - impose a reduced (0.5%) stamp duty for registering the ownership on the property in the Land Register for all families with children (currently, a reduced rate of 0.5% is only applicable to families with at least three children);
 - collect guarantee payments regularly instead of

Chart 1.30
NUMBER OF REAL ESTATE* PURCHASES IN THE BALTIC STATES PER 1000 INHABITANTS
(12-month average indicator)



* All types of properties, including land (land for construction purposes in Lithuania, all types of land in other Baltic States).

Chart 1.31
SHARE OF RECURRING HOUSING TRANSACTIONS IN THE TOTAL NUMBER OF HOUSING TRANSACTIONS DURING THE RESPECTIVE YEAR
(%)



- the current lump sum payment for the guarantee when the loan is granted (like in the young professionals' programme);
- increase the involvement of credit institutions in risk sharing: set that in case of borrower's insolvency after the sale of collateral the credit institution to a small extent also participates in the loss sharing together with the state;
- if mortgage lending starts to grow too rapidly, limit the availability of the state programme in Riga and Riga region, whereas maintaining the support in other regions;
- if credit standards deteriorate, decide that each quarter and for each credit institution the share of new loans for house purchase with LTV above the maximum LTV ceiling established in the Consumer Rights Protection Law (90%) in total new loans for house purchase issued by the respective credit institution should not exceed a certain threshold.

Commercial property market

The hotel segment still has the most difficult situation in the commercial property market. In addition to the Covid-19 pandemic, it has been adversely affected both by the war in Ukraine and higher energy prices. This segment has high insolvency risks. Due to the pandemic, the hotel occupancy has been low (see Chart 1.32). Recovery from the pandemic crisis is hindered by the war in Ukraine: it affects the tourist flow from Russia and Belarus, and makes other tourists cautious with respect to travel plans to Latvia. At the same time, higher energy prices contribute to high maintenance costs. Guest houses and small hotels that are not part of large international chains have a high level of financial vulnerability.

In 2021, the financial situation of shopping centres was still adversely affected by the spread of Covid-19 and restrictive measures. According to SIA Colliers International Advisors, in more than 40% of all days during 2021 retail centres were under restrictions. In March 2022, many restrictions were lifted and completely discontinued in April. However, even after the discontinuation of these measures the number of visits to shopping centres had not reached the pre-pandemic levels. It is possible that consumers still prefer online shopping that became more popular during the pandemic. The financial situation of some smaller tenants is still weak, and it is further undermined by higher energy prices. However, the purchasing power of larger anchor tenants (often large food chains) remains good, and they generate stable rental income for shopping centres.

Demand for office premises is slowly recovering.

However, in the first quarter 2022 the share of vacant spaces was still higher than before the pandemic (see Chart 1.33). A significant share of tenants offer flexible working arrangements to their employees, and this trend is likely to continue⁵⁴.

Rising energy prices put a downward pressure on demand for energy inefficient office premises: the

Chart 1.32
HOTEL OCCUPANCY RATE IN LATVIA (%)

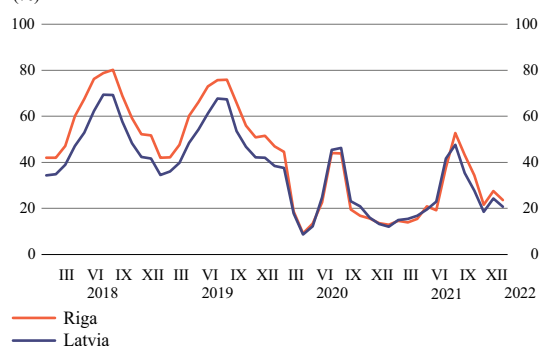
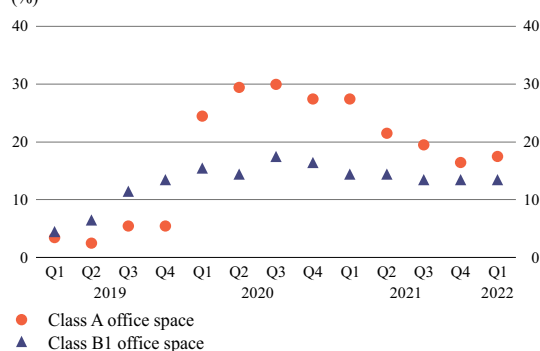


Chart 1.33
SHARE OF VACANT CLASS A AND B1 OFFICE SPACE IN RIGA (%)



total amount of rent and utilities occasionally reach amounts that are paid for better furnished and more energy efficient office premises. As global energy prices keep increasing and as ESG requirements are increasingly met, it is expected that the demand for energy inefficient office spaces will also decrease in the future. On the other hand, the rapid increase in construction costs most likely will drive up rental costs in newly built office spaces.

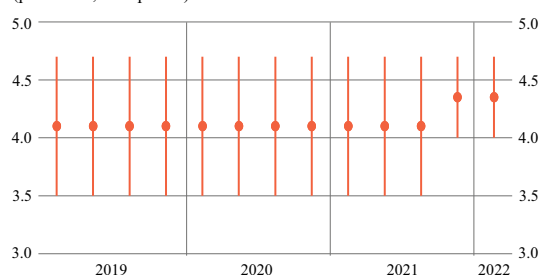
The rapidly increasing construction costs will keep pushing up rent rates in the industrial and warehouse premises segment. As e-commerce became more popular, demand for industrial and warehouse spaces even increased during the pandemic. In the first quarter 2022, the share of vacant spaces in this segment was just 1.6% in Riga, and the rent had slightly increased during the pandemic period along stronger demand (see Chart 1.34). Diminishing trade with Russia and Russian transit flows will adversely affect only a small part of this segment.

⁵⁴ As flexible employment has become an important factor in recruiting qualified personnel, it is expected that this opportunity will also be offered in the future.

Activity in the rental housing segment is gradually expanding. In March 2021, the Residential Tenancy Law was amended mitigating the risks for landlords. It has contributed to higher investment in the rental housing segment and construction of such buildings⁵⁵. According to the estimates of SIA Colliers International Advisors, there were 13 600 rental apartments in rental buildings in Riga in the first quarter 2022.

It is only the hotel segment that currently faces high insolvency risks in the sector of commercial properties. The exposure to risks of credit institutions related to the largest and most vulnerable hotels (see the impact of the cost increase shock on the solvency of vulnerable NFCs) are small.

Chart 1.34
RENT IN THE LARGEST INDUSTRIAL AND WAREHOUSE SPACES IN RIGA
(per month; euro per m²)



⁵⁵ At the end of 2021, two housing rental projects were acquired. In the first quarter 2022, Estonian LHV pension funds purchased five apartment rental blocks in Riga, three of which were built in 2021.

2. CREDIT INSTITUTION SECTOR DEVELOPMENT AND RISKS

Lending development

Lending by credit institutions

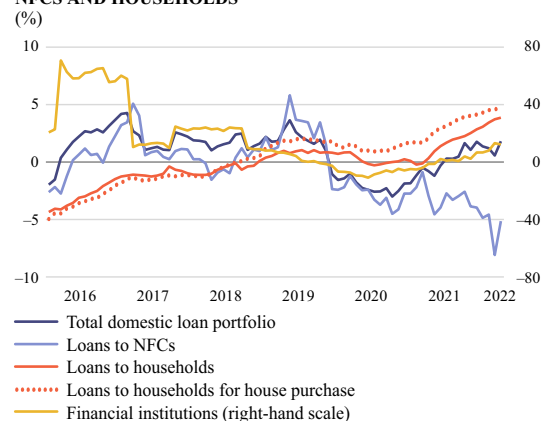
- Domestic lending has slightly improved, but generally is still weak. Having adjusted to the pandemic, the amount of new loans to NFCs had started to grow, although deteriorating confidence due to the war in Ukraine and the rapid increase in costs can yet again slow down NFC lending.
- Household lending has significantly picked up, although it has happened on the background of low starting point, and it is not excessive at the moment. If loans for house purchase lead to increasing imbalances in the housing market, incentives offered by government support programmes would have to be reviewed.

In analysing lending data, it should be noted that annual changes in domestic lending are significantly affected by the expansion of AS Citadele banka as it acquires assets from other financial institutions⁵⁶. Moreover, in September the licence of a credit institution was granted to TF Bank AB Latvia Branch (it used to operate as a non-banking financial institution that offered cross-border consumer crediting services). After exclusion of these one-off factors, **the annual increase in the domestic loans was just 1.8% (see Chart 2.1). The ratio of domestic loans to GDP has been low for a sustained period of time, and at the end of 2021 it was 39.6%.**

The NFC loan portfolio continues decreasing.

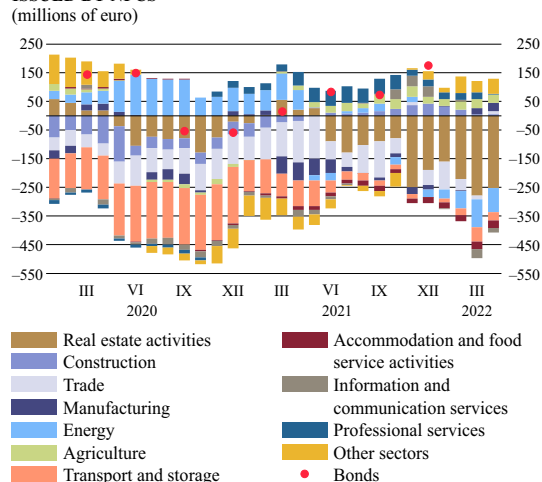
It was greatly affected by early repayment of loans issued to the real estate activities sector when two owners of large shopping centres merged and replaced financing by credit institutions with issuance of debt securities (NFCs had overall more interest in debt financing from financial markets (see Chart 2.2)). In April 2022, the loans issued to the real estate activities sector was 13.2% lower year-on-year. If the impact of

Chart 2.1
ANNUAL RATES OF CHANGE IN DOMESTIC LOANS TO NFCS AND HOUSEHOLDS (%)



Note: For the sake of comparability, the one-off effects related to the structural changes in the credit institution sector and the reclassification have been excluded.

Chart 2.2
ANNUAL CHANGES OF NFC LOANS GRANTED BY CREDIT INSTITUTIONS AND THE RELATED LEASING COMPANIES BY LOAN SECTOR AND ANNUAL CHANGES OF BONDS ISSUED BY NFCS (millions of euro)



Note: For the sake of comparability, the one-off effects related to the structural changes in the credit institution sector and the reclassification have been excluded.

substitution of financing by credit institutions with market financing is excluded, a small annual decrease of 0.5% can be observed in the NFC loan portfolio of credit institutions and the related leasing companies. The loan portfolio increased in agriculture, manufacturing and to a smaller extent in construction, as well as in other sectors⁵⁷.

The amount of new loans issued to NFCs remains modest. The amount of new loans is slightly higher

⁵⁷ Mostly, these are loans granted to recently established companies that do not yet submit annual reports and have not received a sectoral identifier from the CSB yet.

⁵⁶ In July 2021, AS Citadele banka acquired the housing loan portfolio of ABLV Bank AS.

than during the first stage of the pandemic, although it has significantly decreased since the beginning of warfare. In March 2021–February 2022, NFCs received 27.2% more new loans than in March 2020–February 2021, while in May 2021–April 2022 this number was just 3.3% higher than in May 2020–April 2021 (see Chart 2.3). As the investment environment⁵⁸ improved, actual investment in 2021 was 2.3% higher year-on-year, although this year growth is likely to be weaker.

Interest rates in Latvia are still much higher than generally in the euro area, but since the end of 2020 there has been a slight downward trend (see Chart 2.4). The interest rates are not much different from those in other Baltic States. However, there is a higher risk of increase due to higher risk perception and the monetary policy changes of central banks.

The dynamics of lending to NFCs are still driven by the interaction between supply and demand factors. Lending policies of the largest credit institutions are still conservative concerning NFCs. Weak competition in the market of lending to SMEs is one of the factors that affect lending conditions (e.g. loan maturities, prices, collateral requirements). According to a bank lending survey, the credit standards remained stable in 2021 and at the beginning of 2022, and the number of rejected applications remained the same. Considering the high level of uncertainty, as well as the rising energy prices, creditors are likely to become even more prudent. Demand for loans in this situation may also decrease. **NFC demand for loans remained weak.** In the bank lending survey, credit institutions pointed to a lengthy decrease in demand with minor fluctuations in some quarters. The holding back and reluctance to invest were indirectly confirmed by the significant increase in NFC deposits. The rapid increase in energy and other costs may hinder investment projects and lending. At the same time, implementation of the Next Generation EU recovery plan could contribute to lending in the medium term.

Chart 2.3
AMOUNT OF NEW LOANS GRANTED TO DOMESTIC NFCs AND HOUSEHOLDS
(millions of euro)

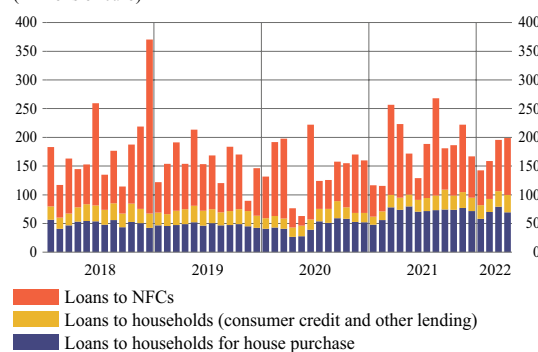
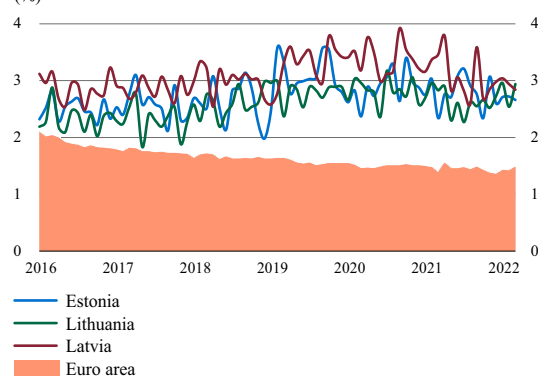


Chart 2.4
INTEREST RATES ON NEW LOANS TO NFCs
(%)



The persisting weak lending to NFCs was also affected by several structural factors: deficiencies in developing the business environment (including hard to predict national and municipal policies in some areas), capacity of national and municipal bodies (including during cooperation with the private sector), fight against the shadow economy, law enforcement system, development of capital markets, development of the construction sector, education system and the labour market.

At the same time, the activity in lending to households has significantly increased: since 2008 crisis, the amount of new loans for house purchase has reached record highs. Higher activity in granting loans for house purchase goes hand in hand with faster development of the real estate market; and it is facilitated mostly by the rising demand that, in turn, is supported by better household purchasing power, larger deposits⁵⁹, and a state support programme for families with children.

⁵⁸ According to the survey of 370 Latvian companies conducted by the European Investment Bank, the investment sentiment improved in 2021, see https://www.eib.org/attachments/publications/eibis_2021_latvia_en.pdf

⁵⁹ Household deposits have reached historical highs both in absolute terms and in relation to the GDP.

However, the rapid increase takes place on the background of sustained lows, as lending dynamics have been very weak for 10 years since the previous crisis (2009–2018). The amount of new loans is still far behind the pre-2008 levels. In the third and fourth quarters of 2021, the total amount of new loans for house purchase was 220 million euro, while between the second half of 2006 and the first half of 2007, the average quarterly amount was more than 675 million euro⁶⁰ (see Chart 2.5). Since the second quarter 2021, the amount of new loans has stabilised. However, it is possible that high inflation could be one of the factors that might encourage investment in real estate to protect savings from the loss of value.

The amount of large loans for house purchase (above 100 000 euro) increased the most. It could be explained by higher real estate prices, as well as higher activity in the segment of private houses. The average size of loans is also gradually increasing (see Chart 2.6). 88% of new mortgages were granted in Riga and Pierīga region (see Box 2.1).

When construction costs rapidly increase, housing loans to finance the purchase of uncompleted properties can have a higher level of risk. However, according to the Credit Register of Latvijas Banka, the share of uncompleted housing projects is minor: 10.6% of all loans for house purchase granted between May 2021 and April 2022 (see Chart 2.7). During the last two years, the cumulative amount of loans for house construction was also small: just 157 million euro⁶¹ (3.4% of the total outstanding amount of loans for house purchase).

The state support programme for house purchase continues to significantly facilitate lending for house

⁶⁰ Data on new loans have been collected since 2015. Before 2015, quarterly increase in the loan stock was considered to be the best alternative to data on new loans. However, it should be noted that the amount of new loans is larger than the increase in loan stock.

⁶¹ In the Credit Register, loans classified as investment in construction were selected. When the risk of credit institutions is calculated, it is assumed that these sites could be completed within two years and that the borrowers would not face the risk of increasing construction costs. For example, from May 2020 to April 2022, the amount of these loans could be 157 million euro.

Chart 2.5
QUARTERLY CHANGES IN LOANS FOR HOUSE PURCHASE AND THE AMOUNT OF NEW LOANS FOR HOUSE PURCHASE (millions of euro)

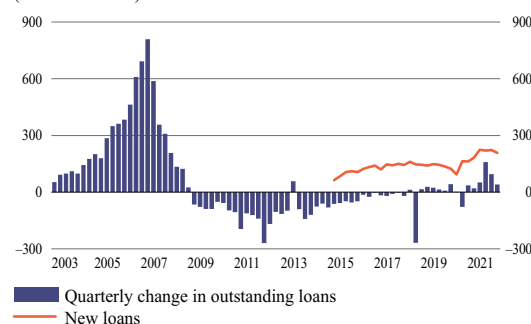


Chart 2.6
NEW LOANS FOR HOUSE PURCHASE BY AMOUNT AND THE AVERAGE LOAN AMOUNT (millions of euro)

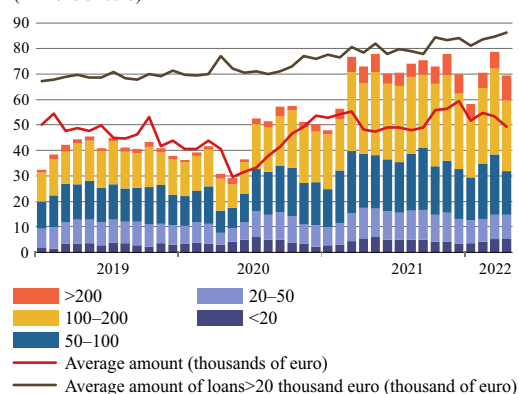


Chart 2.7
NEW LOANS FOR HOUSE PURCHASE BY PURPOSE (milj. euro)

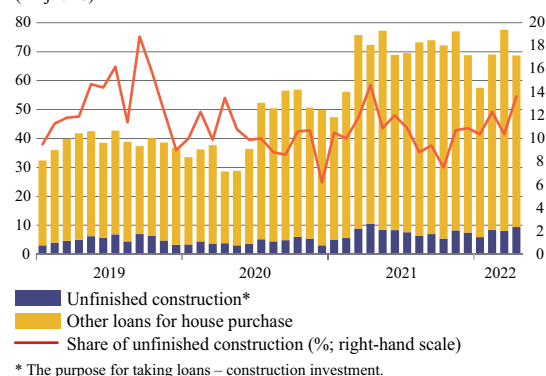
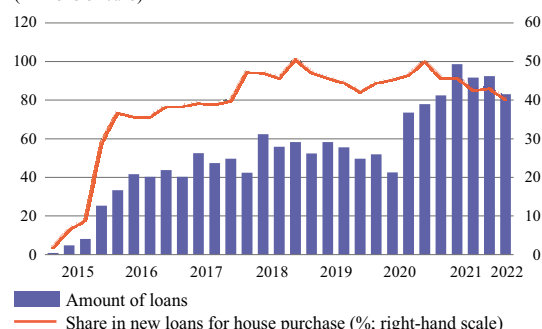


Chart 2.8
STATE-QUARANTEED LOANS FOR HOUSE PURCHASE (millions of euro)



purchase (see Chart 2.8). Under this programme, 44% and 40% of all new loans for house purchase were granted in 2021 and in the first quarter 2022 respectively. They already amount to 28% of the total outstanding amount of loans for house purchase. Although the activity of the real estate market is not yet excessive, the current state support programme reduces the efficiency of the macroprudential policy. A significant share of loans (approximately 25% of all mortgage loans for house purchase) are issued with LTV above 90%, and their share has been stable during the last few quarters (see Chart 2.9). We have to continue monitoring the impact of the state support programme on credit standards and emerging misbalance in the housing market.

Unlike in the neighbouring countries, in Latvia a considerable increase in the loans for house purchase started only in 2021, while in Lithuania and Estonia stable growth has existed already since 2014, and since 2016 it has been quite noteworthy (see Chart 2.10). It should be noted that lending growth is dampened by significant repayments on loans granted before the crisis of 2008 which still constitute roughly 1/3 of all outstanding housing loans and are dominated by annuity mortgages, i.e. loans with gradually increasing principal repayments.

Lending by the non-bank financial sector

- *Non-bank domestic loan portfolio is growing faster than that of credit institutions. Like in the credit institution sector, the non-bank sector has also experienced a faster growth in lending to households.*
- *The war in Ukraine and sanctions against Russia have aggravated the supply chain disruptions even more. They have a negative effect on the car market and leasing activity.*
- *Loans to households granted by other non-bank financial sector players (including payday loan providers but not leasing companies) have surged. It has been driven by the recovery of economic activity, active advertising of brand names and an increase in average amount of the granted loan.*

Chart 2.9
LTV OF NEW LOANS FOR HOUSE PURCHASE (%)

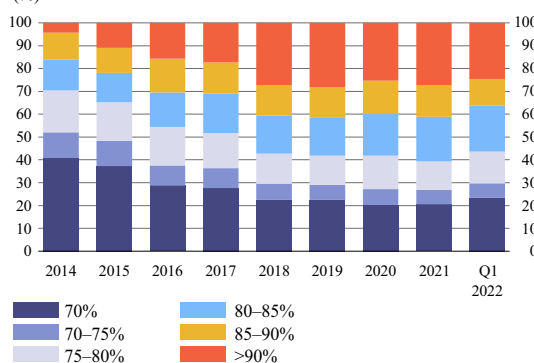
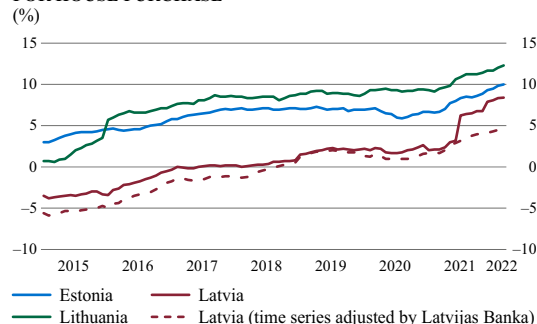
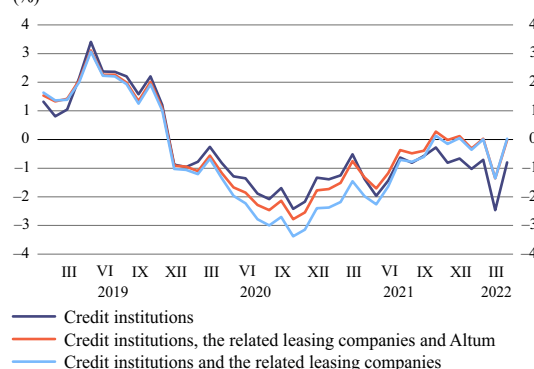


Chart 2.10
ANNUAL GROWTH RATE* OF LOANS TO HOUSEHOLDS FOR HOUSE PURCHASE (%)



* Excluding the one-off effects of loan write-offs, exchange rate fluctuations, reclassification, etc. (ECB). Latvijas Banka's approach to exclusion of one-off effects when using more granular data available on developments in Latvia's credit institutions is to exclude additional reclassification and other one-off effects, but not to exclude the effects of loan write-offs.

Chart 2.11
ANNUAL CHANGES IN LOANS TO DOMESTIC NFCS AND HOUSEHOLDS IN CREDIT INSTITUTIONS, THE RELATED LEASING COMPANIES AND ALTUM (%)



Note. For the sake of comparability, the one-off effects related to the structural changes in the credit institution sector and the reclassification have been excluded.

- *NFC demand for Altum loans has significantly decreased, and the flow of new loans is insignificant.*

The non-bank domestic loan portfolio has grown faster than that of credit institutions: in the fourth quarter 2021 it grew by 6.7% (see Chart 2.11). Loans to households granted by leasing companies and other

non-bank players (including payday loan providers) expanded significantly. The annual increase in loans issued by leasing companies to domestic NFCs (1.3%⁶² in the fourth quarter 2021,) was greatly affected by a one-off transaction, i.e. leasing company OP Finance was incorporated into the structure of OP Corporate Bank plc Latvia Branch. If this structural change is excluded, the loans by leasing companies to NFCs grew by 6.7% in the fourth quarter 2021. **In April 2022, the total domestic NFCs and household loans granted by credit institutions and related leasing providers had not changed year-on-year** (see Chart 2.11).

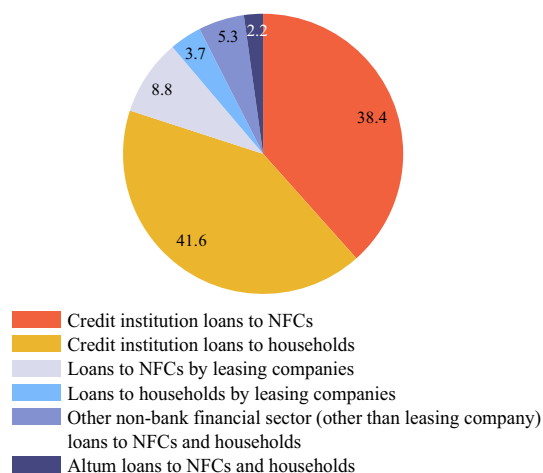
The Latvian financial sector is traditionally dominated by credit institutions (approximately 80% of all loans), but leasing companies also play a significant role (see Figure 2.12). For companies, leasing is a more important source of financing than for households. State loans are also mostly issued to NFCs (by Altum), while households more often borrow from other non-bank financial sector players (including payday loan providers, but not leasing companies).

As the overall loan portfolio of the non-bank financial sector is dominated by loans of leasing companies related to credit institutions and as the latest data are available on them, leasing companies related to credit institutions are included in the further lending analysis of the non-bank financial sector.

Like in the credit institution sector, the non-bank sector has also experienced a faster growth in household loans. According to the Credit Register of Latvijas Banka, loans to households granted by leasing companies in April 2022 exceeded those granted a year ago by 6.5%. Lending is facilitated by higher savings and net wages (although higher inflation slows down the real growth of income).

At the same time, lending to households by leasing companies is hindered by global supply disruptions: the deficit of semi-conductors and other factors that do not allow car producers to duly assemble vehicles create car queues in the primary market and increases

Chart 2.12
CREDIT INSTITUTION, NON-BANK FINANCIAL SECTOR AND ALTUM LOANS TO NFCs AND HOUSEHOLDS
(December 2021; %)



the demand in the secondary market. The war in Ukraine and sanctions against Russia and Belarus have aggravated supply disruptions and the ability to make global payments. Thus, the demand and supply imbalance in the car market could last longer. It should be added that as of 2022 the demand for car purchase loans has been stimulated by government support for the purchase of zero emission and low-emission vehicles⁶³, as well as by less stringent requirements of some market players concerning the purchase of more environmentally friendly cars.

Supply disruptions also affect leasing loans to NFCs as the semi-conductor deficit impacts the commercial vehicles market. Delivery times have significantly increased for commercial vehicles. It also applies to prices of second-hand automotive equipment resulting in demand and supply imbalances in this leasing segment as the producers of commercial vehicles are not able to assemble the required vehicles.

According to the Credit Register of Latvijas Banka, the rate of annual changes in loans issued by leasing

⁶² The increase was calculated by including all respondents of the Quarterly Financial Report (1-FP).

⁶³ A subsidy of 4500 euro for the purchase of an electric car and 2250 euro for the purchase of plug-in hybrid cars, as well as a 1000 euro subsidy if the current vehicle is scrapped. The total value of the programme is 10 million euro, and it is expected to last for two years (or as long as the funds are available). Potentially, the support programme could contribute to the increase in household loans in leasing companies by 10–15% during the next two years (assuming that only electric cars are purchased, the average purchase price is 35 000 euro and the first down-payment is 10% of the price).

companies to domestic NFCs has increased from –9.8% in April 2021 to 5.4% in April 2022. **The amount of new leasing loans to NFCs has reached the pre-pandemic level, but due to the war in Ukraine and sanctions against Russia and Belarus the amount of new loans could decrease again**, as NFCs delay upgrading their car fleet and equipment.

Strong annual increase in loans to households by other non-bank financial sector players (including payday loan providers, but not leasing companies) has also materialised (21.2% in the fourth quarter 2021). This can be explained by the recovery of economic activity, average increase in the amount of loans granted to individuals and active promotion of brand names that in some cases even includes the word “credit” or “loan”. It actually constitutes advertising of loans,

although such advertising to individuals has been prohibited since 2019.

The role of Altum in lending to SMEs has decreased. During the year, the Altum loan portfolio has hardly changed. During the Covid-19 crisis, i.e. in the middle of 2020, Altum loans supported SMEs by providing working capital to almost fully compensate for the decrease in financing from credit institutions. NFC demand for Altum loans has fallen significantly, and the flow of new loans is quite insignificant. In April 2022, the rate of annual changes in the NFC loans issued by Altum became moderately negative (–2.4%) (during the respective period of the previous year, there was a 42.7% increase); thus, lending growth in banks and the related leasing companies currently remains unchanged even if Altum is included (see Chart 2.11).

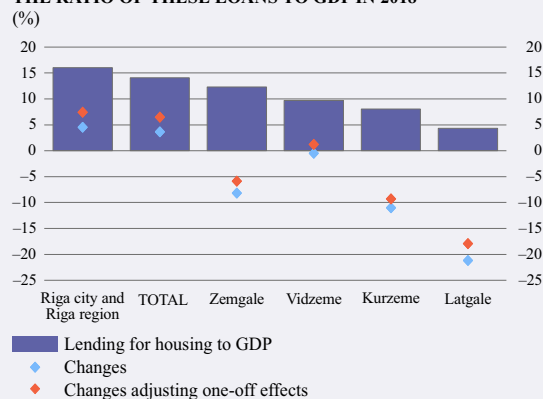
BOX 2.1. HOUSING LOANS IN THE REGIONS OF LATVIA

As of the second quarter of 2018, the Credit Register maintained by Latvijas Banka provides information on the real estate collateral location, which makes it possible to carry out the analysis of lending for house purchase by Latvia's regions. The box summarises the results of this analysis for the period between the second quarter of 2018 and the second quarter of 2021⁶⁴.

Home loans concentrate in Riga city and Riga region. In June 2021, loans to households for house purchase secured with the real estate registered in the above regions constituted 82.1% of all housing loans. By contrast, the share of real estate registered in Latgale constituted only 1.5% of housing loans.

Moreover, the recent years have seen regional disparities in lending for housing increase considerably (see Chart 2.13). **Competition among credit institutions is insufficient in regions.** Since the beginning of 2019, lending for house purchase in Latvia has generally picked up substantially. However, this increase is limited to Riga city and Riga region only: by June 2021 the loans had expanded⁶⁵ by 7.5% in this area. By contrast, lending activity in Latgale and Kurzeme, where it was already very low before, continued on a sharp downward trend and contracted by 17.9% and 9.3% respectively over two and a half years.

Chart 2.13
CHANGES IN LOANS TO HOUSEHOLDS FOR HOUSE PURCHASE IN JUNE 2021 COMPARED TO END-2018 AND THE RATIO OF THESE LOANS TO GDP IN 2018



⁶⁴ For more detailed analysis, see <https://www.macroecconomics.lv/mortgage-lending-what-going-latvias-regions>

⁶⁵ Excluding one-off effects associated with reclassification of lending for house purchase as other lending to households and the cancellation of credit institution licences.

The dominance of Riga city and Riga region⁶⁶ is ever more evident in the amount of new loans: during the first half of 2019 88.3% of all loans for house purchase were granted in Riga city and Riga region (see Chart 2.14). On the other hand, only 11.7% of all loans for house purchase were issued in other regions, although the share of these regions in national GDP in 2019 was 30.3%. Moreover, the share of Latgale was just 0.8% of the total amount of new housing loans (the regional share in the national GDP in 2019 was 6.6%).

Lending conditions also vary across regions (see Chart 2.15.a)). Riga city and Riga region enjoy the lowest interest rates. In the first half of 2021, interest rates were only slightly higher in Vidzeme and Zemgale (0.1 percentage point and 0.2 percentage points respectively), but the difference was more pronounced in Kurzeme and Latgale (higher by 0.4 and 0.6 percentage points respectively). The highest LTV for new loans was observed in Zemgale, since borrowers of this region used state guarantees (68% of all housing loans granted in the region) more often than borrowers in other regions, and LTV very often exceeded 90% in cases where they were employed. LTV distribution for loans granted in Latgale is the most conservative one (see Chart 2.15.b)).

The analysis of lending for house purchase concludes that the trends of these loans are very fragmented in regions. **If these differences become more evident, i.e. overheating risks increase in the housing markets of Riga city and Riga region, while lending stagnates in the remote regions, differentiating the conditions of the state support programme in the respective regions could be considered.**

Chart 2.14
NEW LOANS TO HOUSEHOLDS FOR HOUSE PURCHASE BY COLLATERAL REGION
(millions of euro)

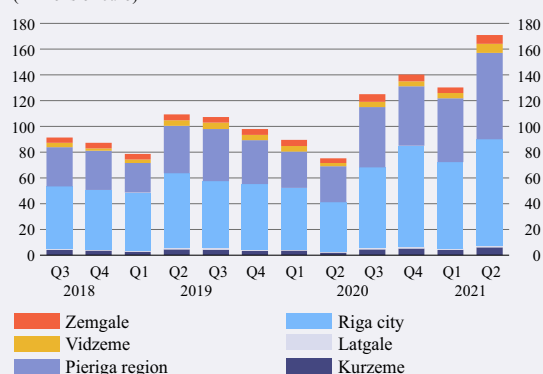
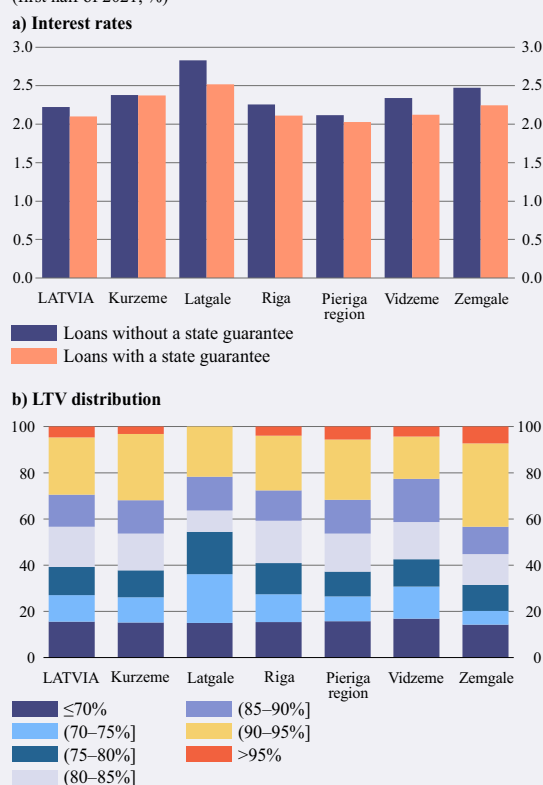


Chart 2.15
LENDING CONDITIONS FOR NEW LOANS TO HOUSEHOLDS FOR HOUSE PURCHASE
(first half of 2021; %)



⁶⁶ The new loans have been selected by settlement date, i.e. the date on which the funds were disbursed to a customer.

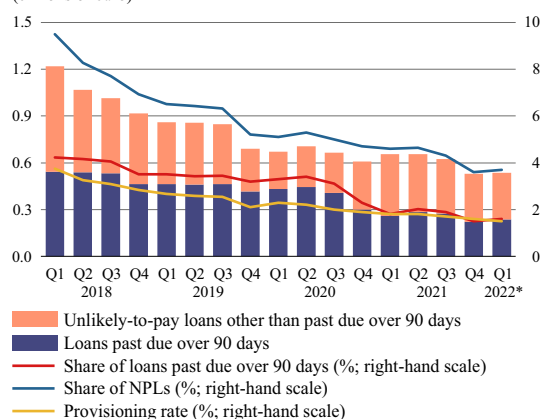
Credit risk

- With the economy adjusting to the pandemic successfully, the quality of the loan portfolio continued to improve.
- However, the war in Ukraine and the related geopolitical pressure, as well as the rising inflation have aggravated the credit risk. In the domestic loan portfolio, the credit risk has mostly increased for borrowers that are more sensitive towards rising energy prices and for NFCs that cooperate with Russia, Belarus and Ukraine. The credit risk of the foreign loan portfolio is high; however, this loan portfolio has decreased and is currently small.

Before the outbreak of the war in Ukraine, the share of NPLs (both long past due loans and unlikely-to-pay loans) decreased. As the purchasing power of borrowers generally improved and as credit institutions continued to gradually write off bad debts from previous periods, the share of NPLs in the loan portfolio decreased from 4.6% at the end of March 2021 to 3.7% at the end of March 2022 (see Chart 2.16). At the same time, the share of loans past due over 90 days has decreased to 1.6% (from 1.8% a year before). The improvement stopped in March 2022, when the share of NPLs increased just slightly.

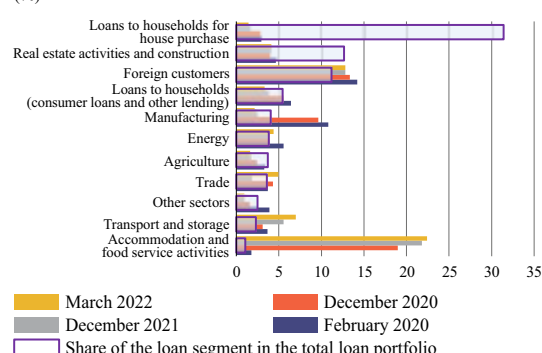
The effects of the pandemic on the borrower groups has been very fragmented: in some comparatively small sectors the loan quality has significantly deteriorated, while the largest part of the loan portfolio has not been affected at all. The quality of loans granted to the accommodation and food service activities sector directly and particularly affected by the pandemic has considerably decreased: in March 2022, the share of NPLs in the loan portfolio of this sector reached 22.4%. However, loans to this sector constitutes only 1.1% of the total loan portfolio of credit institutions. The quality of loans to the transport sector has also decreased. In 2021, this sector generally continued to suffer losses (its loan balance is just 2.3% of the total credit portfolio). Shopping centres as the largest borrowers dominate the sector of real estate activities (12.6% of the total loan portfolio); the pandemic was a large shock to these players, but deterioration

Chart 2.16
NPLS AND THE SHARE OF NPLS AND PROVISIONS IN THE TOTAL CREDIT INSTITUTION LOAN PORTFOLIO (billions of euro)



* Non-consolidated data for the first quarter of 2022 are not fully comparable with previous observations.

Chart 2.17
STRUCTURE OF THE LOAN PORTFOLIO AND THE SHARE OF PLS IN THE RESPECTIVE LOAN PORTFOLIO (%)



in loan quality in this segment was prevented by the state support measures designed to mitigate the consequences of the Covid-19 pandemic. Until the war in Ukraine, the quality of loan portfolios of other sectors, households and foreign borrowers generally continued to improve (see Chart 2.17).

Taking account of the geopolitical factors and considerable increase in energy, commodity and general prices, the credit risk has also grown particularly in the sectors related to Russia, Belarus and Ukraine. The results of a risk survey of credit institutions also point to higher credit risks. The generally high capitalisation of credit institutions and the prudent lending policy (like before the crisis) will help to absorb potential losses (see the section on stress testing).

The quality of loans issued to borrowers from the

countries involved in the warfare may decrease the most; however, the share of these loans is very small in the total loan portfolio of credit institutions. They mostly were issued by credit institutions that play a very small role in domestic lending. Since 2018, loans granted to borrowers from Russia, Belarus and Ukraine have considerably decreased, and in March 2022 they constituted just 1.1% of the total loan portfolio of credit institutions (see Chart 2.18). Some other foreign customers (except those from Lithuania and Estonia) may also have ties with CIS countries, but the total foreign loan portfolio (except customers from Lithuania and Estonia) is small (4.6% of the total loan portfolio). Moreover, the quality of these loans was very low even before the war (see Chart 2.19).

Significant financial difficulties and the resulting deterioration in loan quality could also affect the companies that depend on energy prices and commodities imported from Russia and Belarus and that are greatly affected by the trade and payment restrictions and other sanctions. The greatest increase in credit risks could materialise in the transport sector and energy-intensive manufacturing businesses, as well as in some trade companies. However, this still constitutes as small part of the total loan portfolio of these sectors. For the trade sector, this risk had already partially materialised in March as the loan quality of energy retail companies deteriorated (see Chart 2.17). The significant increase in production costs also aggravated vulnerability of borrowers in other sectors. However, a large share of vulnerable companies do not exhibit immediate solvency problems (see Box 1.4).

Against the background of high inflation and slow economic growth, the quality of loans may decrease (although to a lesser extent) in other economic sectors and the household loan portfolio. According to the stress tests of household borrowers that were performed to establish their resilience to various shocks (see Appendix 2), higher inflation aggravates the vulnerability of such households. Although almost all borrowers in Latvia pay a floating interest rate, higher debt service costs resulting from the potential increase in interest rates could have a lesser effect on household vulnerability.

Chart 2.18
LOAN PORTFOLIO BY BORROWING COUNTRY
(billions of euro)

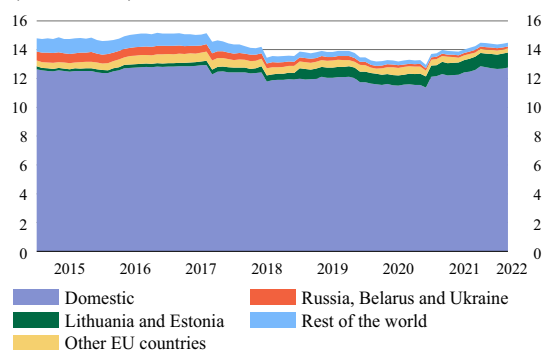


Chart 2.19
SHARE OF NPLS IN THE LOAN PORTFOLIO OF THE RESPECTIVE COUNTRIES
(%)

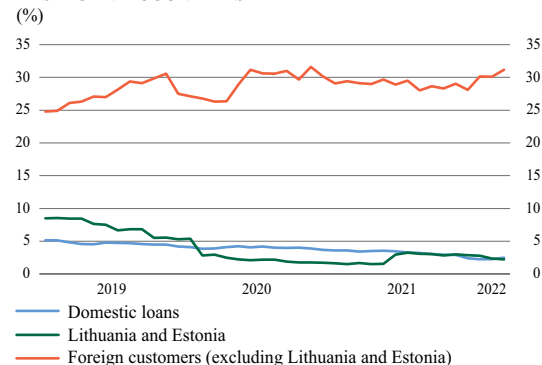
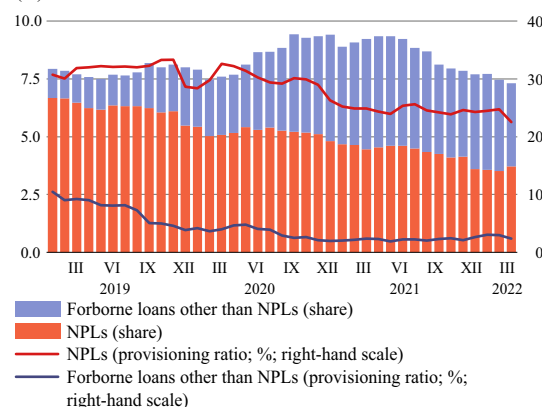


Chart 2.20
NPLS AND FORBORNE LOANS OTHER THAN NPLS (% OF THE LOAN PORTFOLIO) AND THEIR PROVISIONING RATES
(%)



The share of forborne loans other than NPLs has decreased in the loan portfolio from 4.8% in March 2021 to 3.6% in March 2022 (see Chart 2.20). The share of these loans in the domestic NFC and foreign loan portfolios is relatively high: 6.2% and 6.1% respectively, and small in the household loan portfolio (2.0%). The forborne loans were mostly granted to borrowers whose solvency moderately deteriorated at the beginning of the pandemic and

has not yet completely recovered. The geopolitical and price shocks will hinder the recovery of solvency of these borrowers.

As regards breakdown by sector, forborne loans continued to grow in the small accommodation and food service activities sector that was most severely affected by Covid-19. In March 2022, the share of forborne loans other than NPLs reached 63.2% (see Chart 2.21). Considering the war in Ukraine, solvency of these borrowers will not likely recover fast, and loans will remain risky in the medium term. The share of forborne loans has decreased in the real estate activities sector, though it is still relatively high (5.9%). Borrowers from this sector have a better chance to restore their solvency, but rising energy prices could adversely affect borrowers whose office or commercial buildings are energy inefficient.

During the first three quarters of 2021, the share of Stage 2 loans⁶⁷ in the total loan portfolio gradually decreased to the pre-pandemic level, but it resumed growing at the end of 2021 and in 2022 (particularly in March). It can be explained by the decision of one credit institution to introduce a more conservative approach to classification of Stage 2 loans, as well as by more unfavourable economic growth forecasts since the beginning of the war. **Timely recognition of changes in the loan quality means that credit institutions have a good early warning system in place.**

At the same time, the provisions built for NPLs and Stage 3 loans have generally remained low for an extended period and have even decreased (see Charts 2.20 and 2.22). Considering the geopolitical situation and increasing credit risks, the adequacy of provisions should be carefully reviewed. The problem of inadequate provisions could be topical for some small and medium-sized credit institutions where the role of domestic lending is small. The risk of inadequate provisions is mitigated by the adjustment of capital accrued by institutions (9.5% of NPLs in the fourth quarter 2021.).

Chart 2.21
FORBORNE LOANS OTHER THAN NPLS AND THEIR SHARE IN THE LOAN PORTFOLIO OF THE RESPECTIVE SECTOR, HOUSEHOLDS AND FOREIGN CUSTOMERS (%)

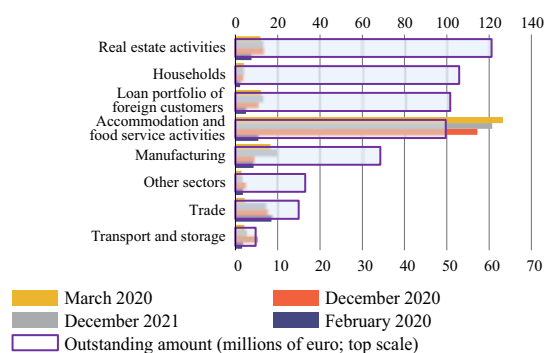
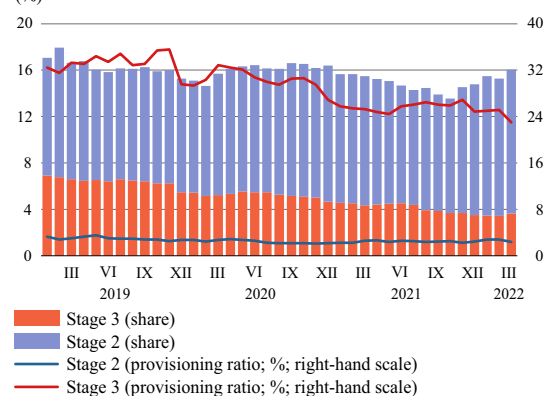


Chart 2.22
STAGE 2 AND STAGE 3 LOANS (% OF THE LOAN PORTFOLIO) AND THEIR PROVISIONING RATES (%)



Taking account of the significant risk of deteriorating quality of loan portfolios, heightened emphasis should be given to the provisioning practices of credit institutions.

⁶⁷ Stage 2 loans are loans whose credit risk has significantly increased since their initial recognition, though their credit value has not decreased 9. In the meaning of IFRS.

Funding and liquidity risks

- *Funding and liquidity risks remain low, as credit institutions have ample excess liquidity and the amount of deposits materially exceeds that of loans.*
- *Funding of credit institutions has been significantly boosted by the deposits accrued in credit institutions during the pandemic, as well as by ECB targeted longer-term refinancing operations (TLTRO). Credit institutions do not need to draw additional funding from financial markets.*
- *Domestic households have become more active in using alternative investment options such as listed shares and investment funds.*

The total balance sheet size of the credit institution sector has not significantly changed. At the end of 2021, holdings of securities slightly decreased (see Chart 2.23), as the volume of collateralised securities for TLTRO III operations followed a downward path, while claims on Latvijas Banka grew and the domestic loan portfolio somewhat expanded. The war in Ukraine has not affected the balance sheet structure of credit institutions, since the value of assets placed in Russia, Belarus and Ukraine or received from these countries is negligible (see Box 1.2).

Funding of credit institutions is still dominated by domestic deposits. In March 2022, they amounted to 79.0% of total credit institution funding (75.4% year-on-year), and their annual growth in Latvia was 5.9%. This included deposits of domestic NFCs that edged up by 7.0% and deposits of domestic households that climbed by 10.1% (see Chart 2.24).

Domestic deposits are moving further into expansionary territory, albeit the annual growth rate is slowing down. This is related to the recovery of economic activity following the lifting of the pandemic containment measures, as well as to decreasing financial support⁶⁸ from the government. In 2021, most support was provided to NFCs (more than 70% of the total

⁶⁸ To mitigate the consequences of the pandemic the government approved the following funding: 1.3 billion euro in 2020; 2.3 billion euro in 2021 and 0.2 billion euro until 8 May 2022.

Chart 2.23
STRUCTURE OF CREDIT INSTITUTIONS' ASSETS AND LIABILITIES
(billions of euro)

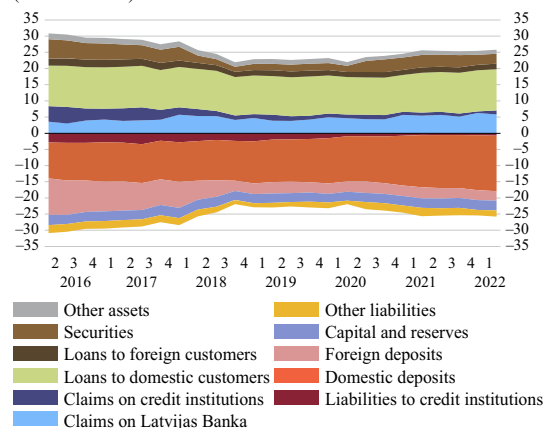
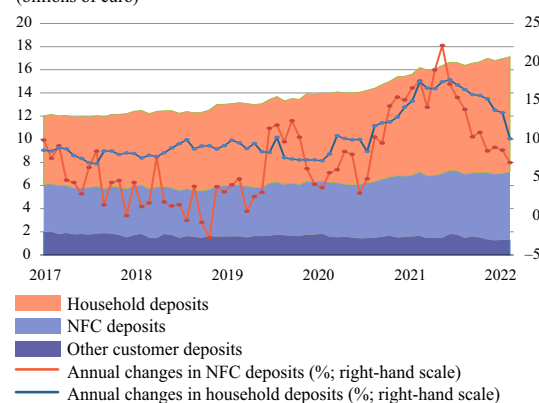


Chart 2.24
DEVELOPMENTS IN DOMESTIC CUSTOMER DEPOSITS
(billions of euro)



support) that contributed to accumulation of funds in credit institution accounts. At the beginning of 2022, the government continued to provide support to mitigate the consequences induced by the pandemic and higher energy prices, but the total amount of support has significantly decreased. Growth rate of domestic deposits will continue to slow down, and this trend will also be driven by deteriorating macroeconomic environment. It should be noted that **the war in Ukraine has not resulted in more active deposit withdrawal in Latvia** – the amount of cash withdrawn with payment cards increased only slightly and only during the first two weeks of the war.

In the majority of other euro area countries, the growth rate of NFC and household deposits is edging down and returning to the pre-pandemic level (see Charts 2.25 and 2.26). NFC deposits exhibited the most noticeable decline in growth rate. This may be due to larger state support to NFCs in 2021.

As a result of lasting low interest rates and significantly higher inflation, **households are more active in looking for alternative investment options in financial assets with higher returns** (mainly by investing in listed shares and investment funds). At the end of March 2022, the household investment held by credit institutions and invested in financial instruments reached 1.0 billion euro (see Chart 2.27) or 9.3% of the total domestic household investment reported by credit institutions. The annual growth rate of this investment reached 15.7%, and it was mainly driven by a higher volume of transactions. However, at the beginning of 2022, this growth slowed down as the market value of most financial assets considerably decreased. At the same time, the volume of transactions nevertheless continued on an upward path.

Foreign deposits continued to decrease. At the end of March 2022, its share in the total deposits fell to 14.5%, including the share of deposits from third countries that edged down to 6.1% (see Chart 2.28). Deposits from countries with a high financial risk level continued to decrease. The same applies to deposits from deposit platforms (in March 2022, this funding was 11.9% lower year-on-year), as credit institutions tried to use ECB TLTRO III long-term financing that was considerably less expensive. At the end of March 2022, 0.6 billion euro was received from ECB ITRMO III operations, and this amount was used by credit institutions other than subsidiaries of foreign credit institutions.

Credit institutions have not had any need to secure significant additional financing from financial markets. The main reason to issue debt securities was compliance with MREL requirements. The domestic loan-to-deposit ratio remained below 80%, and the four largest **credit institutions were able to finance the domestic loan portfolio with domestic deposits** (see Chart 2.29). If deposits from euro area countries are included, all credit institutions other than small foreign branches that in Latvia usually rely on funding from parent banks were able to ensure domestic loans with this financing.

The liquidity of credit institutions remains high. LCR and NSFR indicators are significantly higher than

Chart 2.25
ANNUAL CHANGES IN NFC DEPOSITS IN EURO AREA COUNTRIES (%)

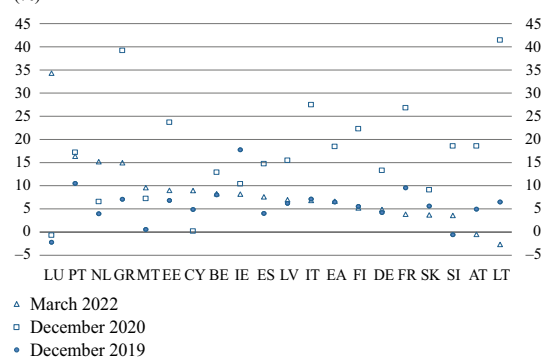


Chart 2.26
ANNUAL CHANGES IN HOUSEHOLD DEPOSITS IN EURO AREA COUNTRIES (%)

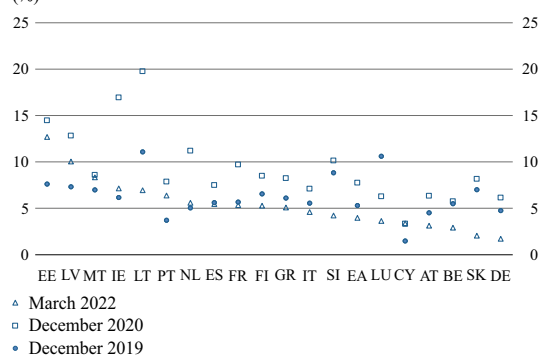
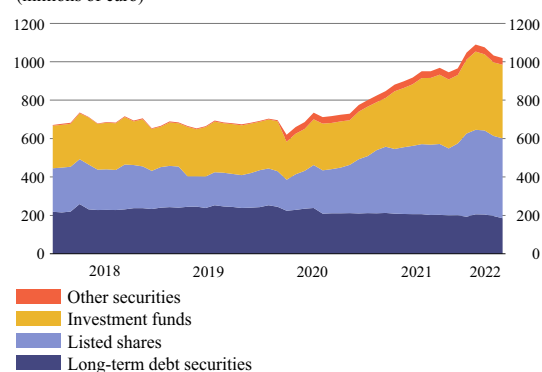


Chart 2.27
SECURITIES HELD BY LATVIAN HOUSEHOLDS IN EU CREDIT INSTITUTIONS (millions of euro)



the minimum liquidity requirements (see Chart 2.30). Credit institutions have accumulated a high level of liquid assets. It was facilitated by low interest rates and weak lending growth. At the end of March 2022, the amount of claims on Latvijas Banka reached almost 75% of LCR liquid assets and 22% of the total assets of credit institutions. Keeping such a significant amount of liquid assets in the central bank is not efficient. It is possible that as interest rates increase the credit

institutions will have more opportunities to invest funds in liquid instruments with positive returns.

Results of liquidity stress tests suggest that credit institutions have sufficient liquidity to cope with risk shocks caused by a potential financing outflow (see Box 2.2 on the stress test of credit institutions). Although the resilience of credit institutions to shocks has slightly improved, overall, there are no significant changes compared to the previous year.

Chart 2.28
STRUCTURE OF DEPOSITS WITH CREDIT INSTITUTIONS BY COUNTRY
(%)

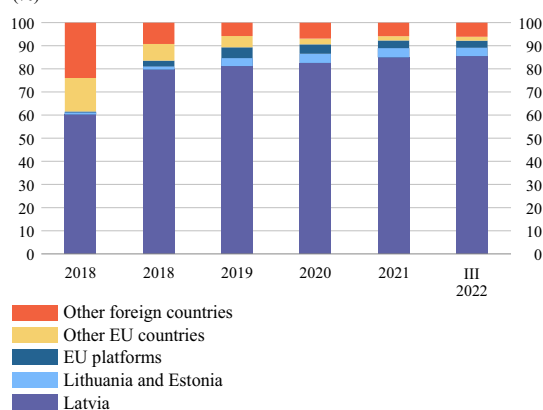


Chart 2.29
DOMESTIC LOAN-TO-DEPOSIT RATIO OF CREDIT INSTITUTIONS
(%)

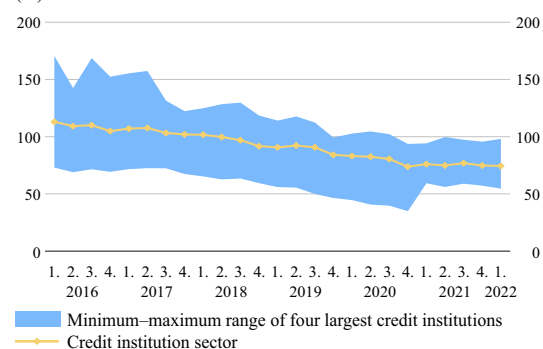
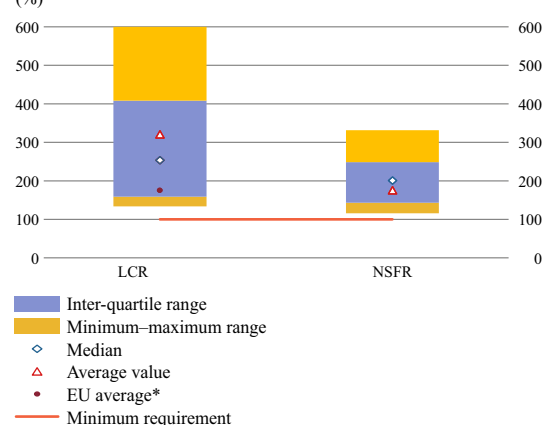


Chart 2.30
LCR AND NSFR OF CREDIT INSTITUTIONS
(%)



* December 2021.

BOX 2.2. LIQUIDITY STRESS TEST OF CREDIT INSTITUTIONS

Liquidity stress tests evaluate the significance of the potential consequences of funding outflows. The cut-off date for data was the end of March 2022 and the tests were conducted employing the liquidity ratio⁶⁹ that the FCMC uses for setting individual additional liquidity requirements for some credit institutions within the framework of the supervisory review and evaluation process and which is equivalent to the FCMC liquidity ratio whose minimum requirement of 30% was binding on all credit institutions prior to the LCR requirements took effect in full.

Stress tests demonstrate to what extent credit institutions are able to cope with domestic and foreign non-MFI deposit outflows until their liquidity (and liquid assets) drops to 0 assuming that credit institutions have no access to additional resources to offset the funding outflows.

According to the stress tests (see Chart 2.31), **all credit institutions would be able to cope with the outflow of up to 30% of domestic deposits and more than 60% of foreign deposits.** During the year, the results of stress tests have not significantly changed. And there is one more credit institution that is able to cope with the outflow of all deposits of domestic and foreign customers. Larger credit institutions have a more limited ability to cope with the outflow of deposits of domestic customers; these mainly are subsidiaries of Nordic banks with centralised liquidity management and a good ability to secure additional liquidity from parent banks.

Additional stress tests were conducted to test two particularly unfavourable scenarios.

The first unfavourable scenario assumed that it was not possible to pledge or sell the securities portfolio other than euro area sovereign securities rated as at least A–, and sovereign securities that have received the AAA long-term rating from at least one of three international credit rating agencies. What concerns euro area sovereign securities, it was assumed that as a result of the first scenario they would lose 30% of their value, and they could be used for the Eurosystem monetary policy operations by applying at least 3.0% discount.

Chart 2.31
RESULTS OF LIQUIDITY STRESS TESTS
(number of illiquid credit institutions)

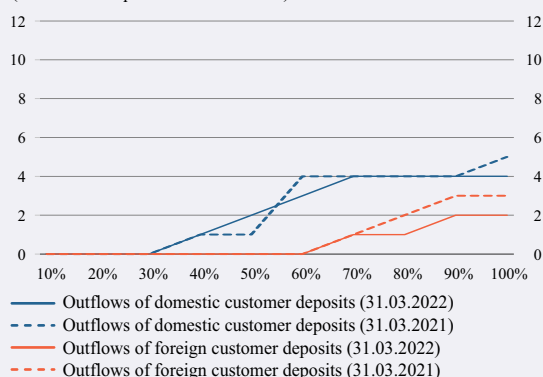


Chart 2.32
RESULTS OF THE FIRST UNFAVOURABLE SCENARIO STRESS TESTS
(number of illiquid credit institutions)

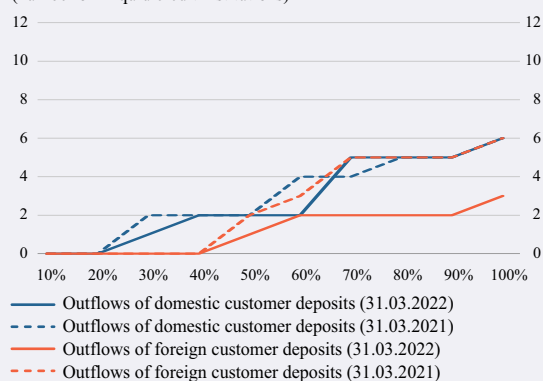
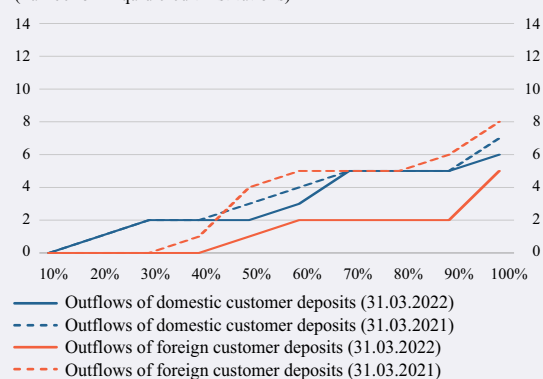


Chart 2.33
RESULTS OF THE SECOND UNFAVOURABLE SCENARIO STRESS TESTS
(number of illiquid credit institutions)



⁶⁹ Unencumbered liquid assets (vault cash; claims on Latvijas Banka and solvent credit institutions whose residual maturity does not exceed 30 days, and claims with other maturity if their recovery prior to the maturity has been stipulated in the agreement; investment in financial instruments whose maturity (repayment, sale term) is up to 30 days as well as other securities whose market is permanent and unrestricted) to the total of credit institutions' current liabilities with residual maturity under 30 days.

In addition to assumptions under the first scenario, the second scenario assumed that no credit institution had access to claims on credit institutions from the country where the respective credit institution had the largest volume of claims on local credit institutions (including claims on the credit institutions within the group).

Application of the first scenario slightly lowers the results of the standard stress tests, as several credit institutions have liquid assets consisting of foreign securities with slightly lower liquidity. However, **they would be able to cope with the outflow of less than 20% of domestic deposits or 40% of foreign non-MFI deposits** (see Chart 2.32), at the end of March 2022 there was only one credit institution that would suffer a shock as a result of outflow of domestic and foreign deposits. **The second scenario undermines the ability to cope with the outflow of non-MFI deposits** (see Chart 2.33). **Credit institutions would be able to cope with the outflow of less than 10% of domestic deposits or less than 40% of foreign non-MFI deposits** (in comparison to the previous year, the ability to cope with the outflow of foreign deposits has continued to improve).

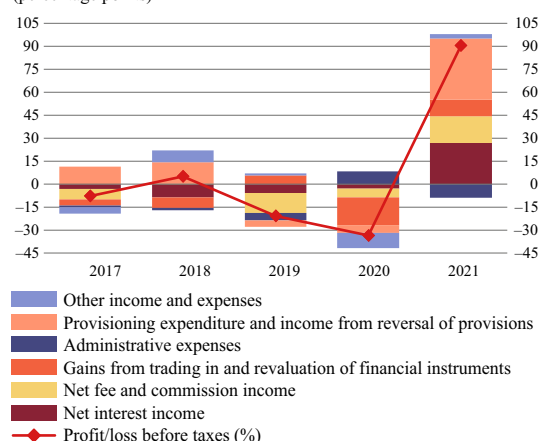
Profitability

- In 2021, the profitability of credit institutions recovered successfully and reached the pre-pandemic level.
- However, due to the war in Ukraine and the related sanctions profitability risks of credit institutions have risen. Credit institutions are already increasing their provisioning expenditure, and additional resources have also been set aside to comply with sanction requirements.
- At the same time, the pandemic has demonstrated the ability of credit institutions to address the difficulties related to external shocks and to duly adjust to the circumstances that will help in mitigating these adverse effects.

In 2021, the profitability of credit institutions significantly improved: earnings before taxes increased by 93.8%⁷⁰ year-on-year (see Chart 2.34).

⁷⁰ In this section, the one-off effects have been excluded from all the data reflecting profitability: in 2018, the banking licence of AS ABLV Bank was cancelled, meanwhile in 2019 AS PNB BANKA was determined to be a credit institution that was or would become financially troubled, and insolvency proceedings were opened against it and sizeable provisioning expenditure was recorded. The effect of the sale of VISA Europe Limited shares has also been excluded from 2016 data, and the effects of the establishment of Luminor Bank AS group and the deferred tax asset write-offs of AS Citadele banka and Signet Bank AS due to the amendments to the Law on Corporate Income Tax have been excluded from 2017 data.

Chart 2.34
ANNUAL GROWTH RATE OF CREDIT INSTITUTION PROFIT BEFORE TAXES ON A CONSOLIDATED BASIS AND CONTRIBUTION OF ITS COMPONENTS TO GROWTH (percentage points)



The improvements were mainly driven by the following factors:

- as the uncertainty of the Covid-19 pandemic eased and the related expected losses did not materialise, **credit institutions cut their expenditure on provisions** (net expenditure on provisions decreased by 89.0% in 2021). Some credit institutions even recovered part of the provisions made in 2020 (their expenditure on provisions was smaller than earnings from reduction in provisioning), but other credit institutions continued provisioning, albeit to a lesser extent than in 2020;
- the aggregate **profit indicators of the credit institution sector were affected by one-off transactions**, i.e. AS Citadele banka acquired SIA

UniCredit Leasing⁷¹ and the mortgage portfolio from ABLV Bank AS. As a result of these transactions, both the assets and net interest income of credit institutions increased (by 9.8%). Higher net interest income was also affected by smaller interest expense, as some credit institutions limited attracting funding from online platforms.

With economic activity increasing, **net fee and commission income of credit institutions also followed an upward path** (by 12.9%), and it was mostly generated from payment services and payment card service.

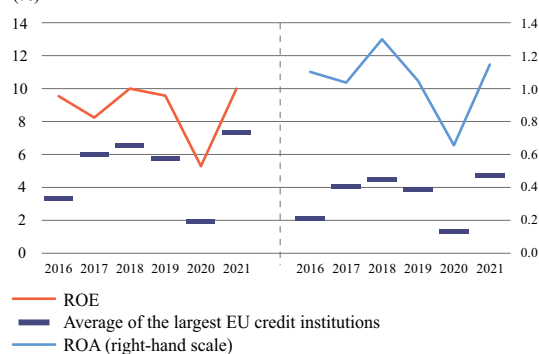
Earnings of credit institutions from the sale and revaluation of financial instruments significantly increased (by 38.3%); however, it was mostly related to the low base effect⁷².

Earnings from financial activity increased faster than administrative costs (mainly due to the above structural changes), **and the cost-to-income ratio of credit institutions improved** reaching 58.6% in 2021 (64.9% in 2020).

⁷¹ See [Latvijas Banka Financial Stability Report 2021](#), Box 2.1.

⁷² See [Latvijas Banka Financial Stability Report 2021](#).

Chart 2.35
AVERAGE ROE AND ROA OF THE LARGEST LATVIAN AND EU CREDIT INSTITUTIONS (%)



In 2021, **general profit indicators of credit institutions significantly improved compared to the year before mostly due to recovering profits of several largest lenders**. ROE and ROA increased to 10.1% and 1.16% respectively (in 2020, these indicators were 5.3% and 0.65% respectively). The profitability ratios of Latvian credit institutions were still above the average ROE of the largest EU credit institutions⁷³ that improved in 2021, as in the case of Latvia (see Chart 2.35).

⁷³ It should be noted that data on the Latvian credit institution sector compiled by international institutions may not be adjusted for major structural changes, i.e. the creation of Swedbank Baltics AS at the end of 2021 (see Box 2.3. Data on Latvian credit institutions in international statistics after the creation of Swedbank Baltics AS).

BOX 2.3. DATA ON LATVIAN CREDIT INSTITUTIONS IN INTERNATIONAL STATISTICS AFTER THE CREATION OF SWEDBANK BALTICS AS

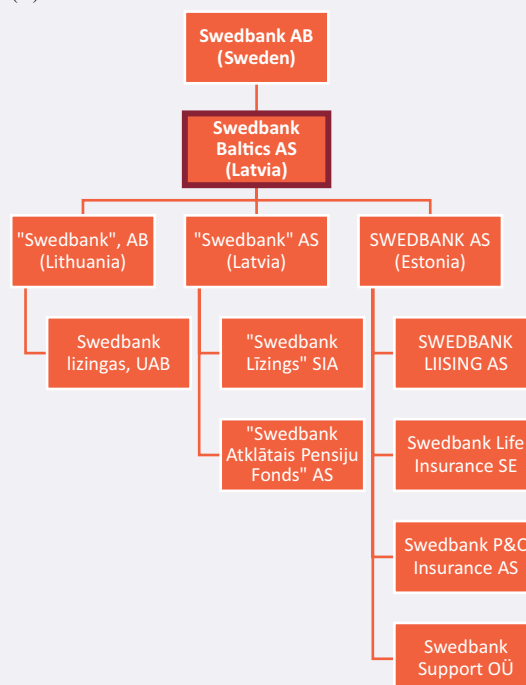
In October 2021, having received an approval from the ECB and other supervisory authorities, the shares of Swedbank Group banks in the Baltic States were transferred to a holding company registered in Latvia – Swedbank Baltics AS that was established at the beginning of 2021 with legal address in Latvia. Subsidiary groups of Swedbank AB (Sweden) from all three Baltic States were consolidated in the new entity. The holding company started producing statistical reports as of 1 October 2021, and they included data on the consolidated Baltic entity. Thus, in the fourth quarter 2021 the value of consolidated assets of Latvian credit institutions significantly increased. To a data analyst who is not informed on this structural change, such data could lead to misguided conclusions on dynamics of Latvian credit institution performance. This box explains the most important aspects that should be considered to analyse data of Latvian credit institutions at a consolidated level as of the fourth quarter 2021.

The holding company Swedbank Baltics AS consolidates Swedbank group entities from Latvia, Lithuania and Estonia (see Chart 2.36). Thus, **data on the assets and profits of entities from all three Baltic States are included in Swedbank Baltics AS reports submitted to supervisors**. Accordingly, these statistical data include assets of Swedbank AB (Lithuania) and SWEDBANK AS (Estonia) subsidiaries (at the end of 2021,

the value of assets of Swedbank AS was 7.5 billion euro⁷⁴, while the value of assets of Swedbank Baltics AS – 40.9 billion euro⁷⁵). Thus, a very steep increase in assets and other balance items was observed in the statistical data year-on-year and quarter-on-quarter.

Interpretation of profit indicators is even more complicated, as in the fourth quarter of 2021 reports submitted to supervisors Swedbank Baltics AS contained only earnings that were recorded only after the date when Swedbank AB (Sweden) Baltic subsidiaries and their group companies were included in the balance sheet⁷⁶, i.e. from 1 October 2021 (the profits of Swedbank AS in 2021 were 73.5 million euro, and the profits of Swedbank Baltics AS – 84.8 million euro). This resulted in deviation of profitability indicators ROE and ROA, as the share of profits recognised by the holding was indicated only for one quarter, while the equity and assets for the entire year⁷⁷. Meanwhile, the liquidity indicators are not reported at the level of holding company; thus, statistics where they were included had data only on the Latvian Swedbank AS.

Chart 2.36
STRUCTURE OF THE SWEDBANK GROUP IN THE BALTICS (%)



Note. Swedbank Group structure, according to Swedbank AB (Sweden) and Swedbank AS (Latvia), Swedbank AB (Lithuania), and SWEDBANK AS (Estonia) 2021 public reports.

The effects of creating the holding company are less visible in the statistics of Latvijas Banka on financial accounts, household balance sheet and international investment balance sheet. In these reports, company data are not consolidated therefore they do not include all assets in Estonia and Lithuania. However, they include changes in direct investment: during the fourth quarter 2021 direct Latvian investment in Lithuania and Estonia, as well as Swedish direct investment in Latvia increased.

Thereafter, several examples of how data on Latvian credit institutions are reflected in statistics and how they would look like if the data of Latvian Swedbank were used instead of Swedbank Baltics AS data are provided.

EBA compiles data on the largest credit institutions that are published in the Risk Dashboard⁷⁸. Data on three largest credit institutions from Latvia and other Baltic States are included in the Dashboard. As of the fourth quarter 2021, Swedbank Baltics AS has also been included. This has resulted in a radical shift in indicators for the largest Latvian credit institutions: the profitability indicators (e.g. ROE) rapidly decreased, while capitalisation indicators (see CET1 ratio in the example) grew as subsidiaries of Swedbank AB in

⁷⁴ [Swedbank Consolidates Annual Report 2021](#).

⁷⁵ [Swedbank Baltics AS Consolidates Annual Report 2021](#).

⁷⁶ Swedbank Baltics AS consists of the following companies – in Latvia: Swedbank AS and its subsidiaries Swedbank Lizingas and Swedbank Atklātais Pensiju Fonds, in Lithuania: Swedbank AB and its subsidiaries Swedbank Lizingas, in Estonia: SWEDBANK AS and its subsidiaries SWEDBANK LIISING AS, Swedbank Support OÜ, Swedbank Life Insurance SE and Swedbank P&C Insurance AS.

⁷⁷ In 2021, in the consolidated annual report of Swedbank Baltics AS, the earnings have been annualised in the ROE and ROA calculation to provide more objective data on the profitability of the group.

⁷⁸ [European Banking Authority Risk Dashboard](#).

the Baltics have a relatively high capital adequacy (see Chart 2.37).

The **ECB Statistical Data Warehouse**⁷⁹ also includes data on credit institutions. As of the fourth quarter of 2021, Swedbank Baltics AS has also been included in the consolidated banking data⁸⁰ available here. Thus, total assets and equity of banks reflected by data (see Chart 2.38) increased approximately two-fold during just one quarter, while in the supervisory reporting they would remain almost the same. Thus, by analysing time series of credit institutions and comparing them with data from other EU countries, it may be concluded that the Latvian statistics will demonstrate a very rapid increase in the balance sheet items of banks.

However, not all data sources suffer from such data interpretation already from the fourth quarter of 2021. For instance, the sample of institutions included in the **ECB banking supervision data**⁸¹ (also published in the ECB Statistical Data Warehouse) is aligned with the range of institutions supervised by the ECB. Respectively, the date of the fourth quarter 2021 still include Swedbank AS, while as of the first quarter 2022 it is substituted by Swedbank Baltics AS that has become the subject of ECB supervision as of the beginning of 2022. Respectively, changes in these data will become visible only in 2022, and not as of the fourth quarter 2021.

After the publication of 2022 data, part of these effects will disappear, as they will have a balanced dynamics of balance sheet and earnings data. However, the speed of changes in the profit and loss items will be extreme until the fourth quarter 2022 when it will no longer be affected by the base effect.

⁷⁹ [ECB Statistical Data Warehouse](https://sdw.ecb.europa.eu/browse.do?node=9691144).

⁸⁰ <https://sdw.ecb.europa.eu/browse.do?node=9691144>

⁸¹ <https://sdw.ecb.europa.eu/browse.do?node=9691146>

Chart 2.37
ROE AND CET1 RATIO OF THREE LARGEST CREDIT INSTITUTIONS IN THE EBA RISK DASHBOARD AND IN DATA FROM REPORTS PROVIDED TO SUPERVISORS (2021; %)

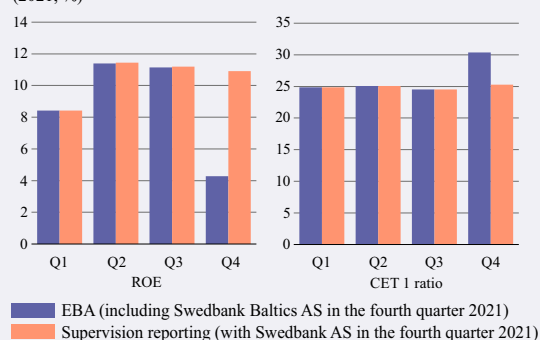
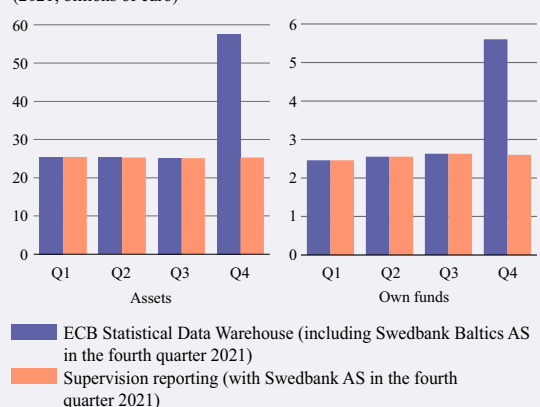


Chart 2.38
TOTAL ASSETS AND TOTAL OWN FUNDS IN THE CONSOLIDATED BANKING DATA FROM THE ECB STATISTICAL DATA WAREHOUSE AND IN THE DATA FROM REPORTS PROVIDED TO SUPERVISORS (2021; billions of euro)



Operative data on the first three months of 2022 confirm that at the beginning of 2022 the main profitability sources (net interest income and net fee and commission income) remained stable. Higher profits were significantly affected by one-off earnings from reorganisation of the SEB group⁸².

However, the war in Ukraine and the related sanctions, higher energy and other prices, as well

as supply chain disruptions undeniably affect the Latvian economy, borrowers and eventually also the profitability prospects of the Latvian credit institutions. In March 2022, credit institutions already increased provisioning costs. However, they are still smaller than at the beginning of 2020. The stability risks of interest rate and commission flows of credit institutions are also on the rise.

At the same time, credit institutions have to allocate resources to ensure resilience against cyber security

⁸² See [SEB has a uniform insurance and long-term accrual group in the Baltic States](#), 28.12.2021.

risks, as well as AML/CTF and sanction compliance (see Box 2.4). Climate change and sustainability will continue to be high on the agenda; these challenges will drive up the costs of credit institutions both when conducting climate change simulation stress tests and improving the methodology for assessing loan applicants.

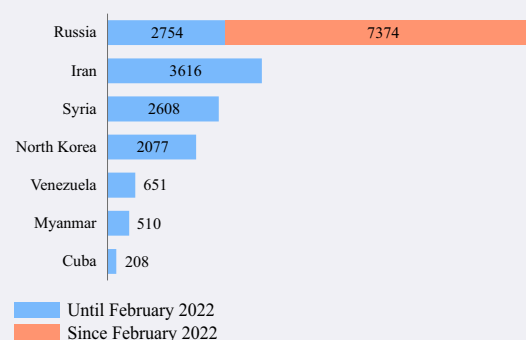
At the same time, several factors could mitigate the effect of negative shocks. The experience of credit

institutions gained during the Covid-19 pandemic has demonstrated their ability to flexibly respond to borrowers' financial difficulties and offer solutions that would allow the borrowers to restore solvency. Availability of state support to the economy will mitigate the effects of adverse shocks in the short-term helping to both directly and indirectly deal with borrower difficulties and limiting the impact on profitability of banks.

BOX 2.4. MANAGEMENT OF RISKS RELATED TO RUSSIAN AND BELARUSIAN SANCTION COMPLIANCE

The Russian war in Ukraine has resulted in unprecedented massive response of the EU, USA, UK and other allies with significant agreed sanctions against the Russian financial sector and strategic economic sectors (defence, aviation and energy), as well as individuals that are close to Putin's regime. As a result of the expansion of Western sanctions, Russia has clearly become the most sanctioned country in the world (see Chart 2.39). Sanctions against Belarus have also expanded.

Chart 2.39
MOST SANCTIONED COUNTRIES BY THE NUMBER OF SANCTIONED INDIVIDUALS, AS OF 29 APRIL 2022



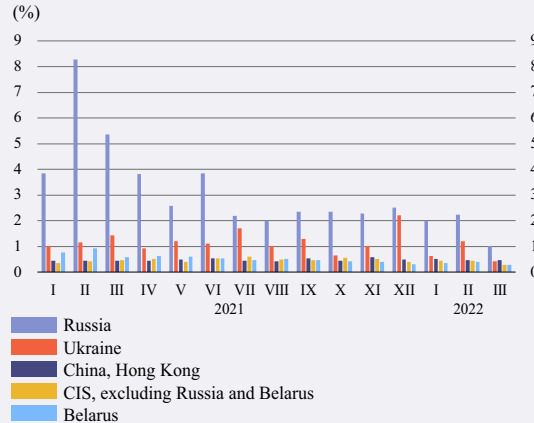
Almost every day information on new sanctions and rules regulating sanctions such as general and special licences, amendments to the lists of sanctioned persons, etc. are published. **Such enormous expansion of sanctions has not been considered in any sanction compliance risk assessment.** It was not possible to prepare for such increase of sanction compliance measures: due diligence and screening of customers, their partners, end users of services and goods and ultimate beneficial owners of all three; as well as screening of goods, jurisdiction of their origin, manufacturers, transportation and storage, against the lists of sanctioned persons, sanctioned industries and lists of dual used goods; verification of transaction compliance, and the related investigation and review of suspicious cases.

The financial sector, in particular credit institutions, play an important role in ensuring sanction compliance. **Latvian credit institutions have managed to ensure sanction compliance so far.** In this regard, the AML/CTF system that was significantly strengthened during the last few years has served as a useful tool that includes a carefully reviewed customer base and better internal control systems.

However, the intensification of sanctions and the sharp increase in their complexity have significantly pushed up compliance risks related to these new sanctions. Therefore, **credit institutions implement enhanced risk mitigation measures**, including by performing in-depth due diligence of all payments related to Russia and Belarus quite often delaying the payment for several weeks or refusing to serve the customer or proceed with the transaction if the related risks exceed their risk appetite. Thus, **as a result of sanction compliance and risk mitigation measures by customers and credit institutions, the volume of payments related to Russia has significantly decreased since March 2022 (more than two times)** (see Chart 2.40).

As in cases when the mitigation of sanction risks at the level of risk appetite of credit institutions cannot be ensured just by means of enhanced due diligence of customers and transactions, **the largest credit institutions such as Swedbank AS, AS SEB banka, AS Citadele banka and the Latvian branch of Luminor Bank AS have chosen to abdicate the risk by applying derisking**, and have already ceased or decided to cease all payments in the Russian and Belarusian roubles in the nearest future. As of 20 April, Swedbank AS has stopped all payments to Russia and Belarus, and as of 6 May all payments from these countries. AS SEB banka plans to discontinue servicing all incoming and outgoing payments to Russia and Belarus as of 1 June. The Latvian branch of Luminor Bank AS will cease servicing outgoing payments to Russia and Belarus in all currencies as of 1 June, and incoming payments from these countries as of 1 July. However, certain exceptions may apply, e.g. pension payments. Banks of lesser importance also implement risk mitigation measures to limit transactions with Russia and Belarus.

Chart 2.40
SHARE OF THE AMOUNT OF OUTGOING AND INCOMING CROSS-BORDER PAYMENTS OF CREDIT INSTITUTION CUSTOMERS (%)



Refusal to serve customers related to sanctioned persons and territories and refusal to process transactions with them will result in lower commission revenues of credit institutions. However, the scope of services related to Russia is small in these credit institutions. Therefore, loss of this source of income will have a relatively minor effect on their profits if compared to losses resulting from fines, reputation risks, etc. if sanctions are violated.

According to the Law on International Sanctions and National Sanctions of the Republic of Latvia, sanction compliance of the Latvian financial and capital market participants is supervised and controlled by the FCMC, Latvijas Banka and the Consumer Rights Protection Centre (hereinafter, competent authorities). **Along unprecedented and rapid rise in the scope of sanctions, the number of sanction evasion attempts and possible violations of sanctions have also increased. It results from internal control systems of market participants that are not adequate to such rapid increase in sanctions.** Prompt remediation of deficiencies in these systems is not possible without more active participation of competent authorities that ensure enhanced supervision measures. Therefore, competent authorities should significantly increase the resources required to improve the capacity to supervise sanction compliance taking into consideration the expected intensification of rapidly expanding sanctions and their application periods that may be as long as several decades.

Capitalisation

- In 2021, the majority of credit institutions recovered from the effect of the Covid-19 pandemic, ending the year with their profits returning to the pre-pandemic level and a mostly high level of capitalisation.
- Overall, the voluntary capital buffers of the significant credit institutions are sufficient to absorb potential losses in the event of a deteriorating borrowers' solvency.
- The war in Ukraine has increased the solvency risks of some small credit institutions; however, their total share in the credit institution sector is negligible.

Overall, the capital ratios of Latvia's credit institutions⁸³ remain high and exceed the pre-pandemic level. In late 2021, the total average capital ratio of credit institutions was 25.3% on a consolidated basis, the CET1 capital ratio – 24.3%⁸⁴ and the leverage ratio – 10.1%⁸⁵. In comparison, at the end of 2021, the average CET1 ratio of the significant EU banks reached 15.4%, while their leverage ratio stood at 5.8%⁸⁶ (see Chart 2.41).

Overall, the voluntary capital buffers of Latvia's O-SIIs⁸⁷ (on average 11.5% of RWA) are sufficient to absorb potential losses which might be incurred in the event of a deteriorating borrowers' solvency due to the war in Ukraine and general upward price level shifts (see Section "Credit risk and market risk

Chart 2.41
CAPITALISATION RATIOS OF CREDIT INSTITUTIONS ON A CONSOLIDATED BASIS (%)

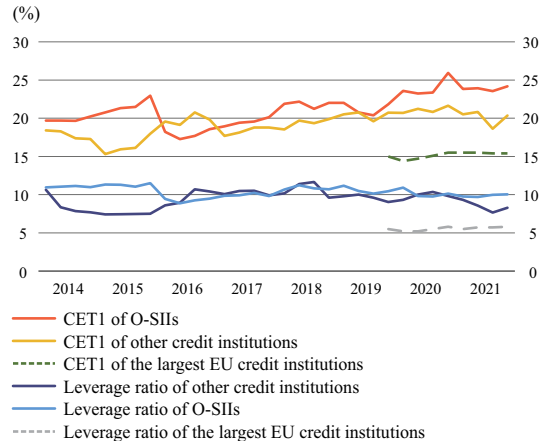
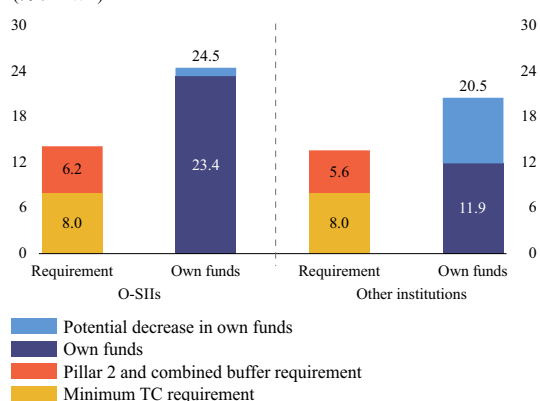


Chart 2.42
MEETING CAPITAL REQUIREMENTS BY MAKING 100% PROVISIONS FOR DIRECT EXPOSURES TO RUSSIA, BELARUS AND UKRAINE (% of RWA)



shock-absorption capacity"). The direct investment⁸⁸ by credit institutions in Russia, Belarus and Ukraine is overall low within the sector: even assuming that 100% provisioning rate would be needed for this investment, the average capitalisation of significant institutions would remain largely unchanged.

In contrast, own funds of some small credit institutions whose investment in Russia, Ukraine and Belarus accounts for a larger share in assets and whose profitability was already low prior to the Covid-19 pandemic and capital buffers were not sufficiently accumulated, might diminish, on average, even by half, and their solvency risks are high (see Chart 2.42). Nevertheless, the share of the above credit institutions' assets in total assets of the credit institution sector does not exceed 3.5%.

⁸³ Capitalisation calculations and charts only include the credit institutions operating at the end of 2021. Rigensis Bank AS, which ceased its operations in late 2021, is excluded.

⁸⁴ 23.1% and 21.7% respectively in 2019, 26.7% and 25.5% respectively in 2020.

⁸⁵ 10.3% respectively in 2019, 10.1% in 2020. The 3% minimum leverage ratio requirement is in force since 28 June 2021.

⁸⁶ EBA risk radar of the fourth quarter of 2021 [EBA Risk Dashboard. Data As Of Q4 2021 \(for publication.pdf\)](https://www.eba.europa.eu/en/risk-radar/quarterly-reports/quarterly-risk-radar-q4-2021), [europa.eu](https://www.eba.europa.eu/en/risk-radar/quarterly-reports/quarterly-risk-radar-q4-2021).

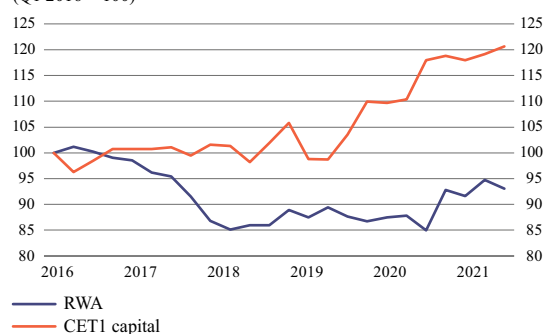
⁸⁷ Five O-SIIs are identified in Latvia: AS Citadele banka, AS Rietumu Banka, BluOr Bank AS, AS SEB banka and Swedbank AS. In late 2021, the assets of O-SIIs comprised 76.9% of the total assets in the credit institution sector and 93.4% of the assets of credit institutions with capital in Latvia.

⁸⁸ Exposures subject to probable shock consist of loans, debt securities, cash at the central bank and other demand deposits and equity instruments.

The deadline for the implementation of recommendations provided by the supervisors at the onset of the pandemic on limiting dividend payouts expired on 30 September 2021. Taking account of the war in Ukraine and the related uncertainty, the credit institutions that had planned to pay out dividends during the first half of 2022 have, for the time being, postponed these plans. Some credit institutions invested their profit in strengthening their capital, while part of credit institutions managed to seize the opportunity to distribute the profit of previous years until February 2022. The amount of dividends paid out until the end of 2021 was proportionate to the previously set restrictions and did not exceed 0.7% of RWA in 2021.

Despite the lifted restrictions, **the amount of retained profit at the end of 2021 showed a 62.4% increase in comparison with the amount at the end of 2019.** **The limit on the payouts of dividends set during the pandemic has been the main factor determining the increase in the capital composition quality.** At the end of 2021, the share of CET1 capital in the total capital amounted to 96.0%. In the future, this ratio could diminish again with credit institutions stepping up their efforts to draw additional funding to comply with the MREL requirements. The capital increase notably exceeds the increase in RWA that are following an upward trend again after the completion of the credit institution sector's transformation taking place from 2016 to 2019 (see Chart 2.43). In 2021, the surge in RWA was mainly influenced by the expansion of the leasing portfolio of AS Citadele banka, as it acquired SIA UniCredit Leasing and the mortgage loan portfolio of ABLV Bank AS.

Chart 2.43
TRENDS IN THE CAPITAL RATIO NUMERATOR AND DENOMINATOR
(Q1 2016 = 100)



Credit risk and market risk shock-absorption capacity

- *Macroeconomic stress test results suggest that the resilience of the significant credit institutions⁸⁹ to potential shocks remains good. However, vulnerability of some small credit institutions to shocks has increased.*
- *Credit institutions' vulnerability to the shock stemming from the surging energy prices, the warfare in Ukraine and sanctions is higher than was the vulnerability to the COVID shock, owing to the structure of credit institutions' loan portfolio. However, the overall high level of capitalisation, as well as the prudent lending policy mitigates the impact of the shock.*
- *The sensitivity analysis results also indicate that the capacity of significant credit institutions to absorb potential future losses is high. However, the shock absorption capacity of less significant credit institutions has declined due to investment in Russia, Ukraine and Belarus.*

Latvijas Banka conducts the sensitivity analysis⁹⁰ and macroeconomic stress tests⁹¹ of credit institutions on a regular basis. The assessment is based on the consolidated data of credit institutions as at the end of 2021. The macroeconomic stress test assessment covers the period until the end of 2022. The thresholds

⁸⁹ The significant credit institutions are Swedbank AS, AS Citadele banka and AS SEB banka – all supervised by the ECB.

⁹⁰ A credit risk sensitivity analysis provides an indication of the magnitude of an increase in loans past due over 90 days a credit institution would be able to absorb before its capital adequacy ratios fall below the minimum capital requirements. It is assumed that a credit institution has to provision at least 50% for its portfolio of loans past due over 90 days and additionally provision 50% of the increase in the loans past due over 90 days; unlikely-to-pay loans have to be provisioned by at least 35%. The credit institution capital and RWA are reduced by the amount of the additional provisions.

⁹¹ Macroeconomic stress tests measure the resilience of Latvia's credit institutions to various adverse macroeconomic shocks whose materialisation is plausible, yet their probability is low. The results of the credit risk stress tests allow assessing whether credit institutions have sufficient capital for absorbing losses stemming from a rise in credit risk in particularly severe and even extreme macroeconomic stress circumstances without additional capital injections.

used for the stress tests are as follows: the total capital ratio of 8.0%, the Tier 1 capital ratio of 6.0% and the CET1 capital ratio of 4.5%⁹². A failure to meet any of the minimum capital requirements is automatically considered a failure to meet overall capital requirements.

Latvijas Banka continues to improve its methodology for macroeconomic stress testing. Taking account of the high share of collateralised loans in the loan portfolio of Latvian credit institutions, the approach to calculation of additional required provisions has been changed in 2022 macroeconomic stress test. In the stress test, several loan portfolios are distinguished, and for each residential loan portfolio, credit institution-specific average weighted loss given default (LGD) ratio is calculated, which is used instead of the former single provisioning rate. Calculation of the LGD ratio is based on the data on collaterals of individual loans available in Latvijas Banka's Credit Register. For this calculation, the state guarantees, currency and deposits are taken in full amount, but a 30% haircut is applied to real estate and physical collateral.

The sensitivity analysis results suggest that the capacity of significant credit institutions to absorb potential future losses remained good. At the end of 2021, the major lenders, on a consolidated basis, would have been able to absorb a potential rise in the credit risk, which would result in an increase in the share of loans past due over 90 days by 19.0 percentage points (20.0 percentage points at the end of 2020), without any additional capital investment. On the other hand, some small credit institutions for which investment in Russia, Ukraine and Belarus were one of the factors, after creating provisions in the amount set by the sensitivity analysis assumptions would have to absorb the incurred losses from their combined buffer requirement.

Macroeconomic stress test results suggest that the resilience of credit institutions to potential shocks is good overall. The capacity of significant

⁹² A characteristic feature of the capital structure of Latvian credit institutions is the fact that the Tier 1 capital requirement is met with CET1 capital; therefore, compliance with the Tier 1 capital requirement automatically means the compliance with the CET1 capital requirement as well. As a result, a relatively high stress test threshold is applied to high quality capital.

credit institutions to absorb potential future losses improved compared to the end of 2020, since credit institutions' capitalisation has increased. At the same time, the shock absorption capacity of less important credit institutions has declined due to losses caused by investment in Russia, Ukraine and Belarus. **Credit institutions' vulnerability to the shock stemming from the surging energy prices, the warfare in Ukraine and sanctions is higher than was the vulnerability to the Covid-19 shock, owing to the structure of credit institutions' loan portfolio. However, the overall high level of capitalisation, as well as the prudent lending policy mitigates the impact of the shock.**

In the stress test market risk component, the data on each credit institution's securities portfolio, including the securities measured at fair value through profit or loss, securities measured at fair value through other comprehensive income and securities measured at amortised purchase cost, have been used. In this stress test methodology, market shocks are applied to all securities in order to assess the overall economic effect of the changes in the securities portfolio market value on capital, assuming that the securities' value changes will need to be recognised regardless of their accounting treatment.

Although at the group level a few credit institutions have different securities portfolios, more detailed data at the level of individual credit institutions (at ISIN level) have been used. Then, at group level the securities portfolio has been extrapolated assuming that it is structurally similar to that of a credit institution's level.

Each credit institution's bond portfolio securities have been grouped by major risk category, e.g. euro area and US bond yields of different maturities, credit rating and sector, according to expert assessment. Taking account of their share in the portfolio, bonds of the three largest issuers have been reported separately. The modified duration of each bond is set using Thomson Reuters data or, in case of lack of data, using the residual maturity of the bond as an approximation. The modified duration is used to calculate the impact of the interest rate shock scenario. The foreign exchange risk has been reported separately from the valuation effect, and the shock scenario is applied to the open foreign

exchange position in US dollars and Russian roubles.

The macroeconomic stress test has been carried out to assess the capability of credit institutions to absorb a potential increase in credit risk and market risk caused by a deterioration of the macrofinancial environment. The main risk under the stress scenario is a significant deterioration of foreign demand owing to the energy price shock and supply disruptions. This leads to a fall in investment volume and a reduction in consumption, a recession, deteriorating creditworthiness of borrowers (particularly in the sectors weakened by the pandemic) and an increase in unemployment which, in combination with the mounting consumer prices and higher interest rates, weigh on households' ability to cover their liabilities. The capacity of credit institutions to absorb potential losses associated with the loan portfolio of foreign customers has also been modelled.

As a result of the moratorium and individual measures applied to borrowers by credit institutions during the Covid-19 pandemic, the share of NPLs has even decreased; however, the amount of forborne loans have grown in credit institutions' balance sheets. In the event of a material deterioration of the macrofinancial environment, the quality of forborne loans is likely to worsen. To reflect this risk, the stress scenario foresees the migration of these loans to the "past due over 90 days" loan category.

Tables 2.1 and 2.5 provide a summary of the stress test parameters.

Under the baseline scenario, the evolution of domestic loan portfolio is based on Latvijas Banka's GDP forecast of June 2022. Owing to the warfare in Ukraine and the resulting sanctions, Latvia's GDP will increase by 2.9% (seasonally adjusted), and inflation will reach 14.8%.

To assess households' credit risk under the baseline scenario, the microsimulation model based on the survey of household borrowers has been employed (see Appendix 2). The modelling results show that the share of NPLs might edge up by 1.8 percentage points due to the expenditure shock.

Taking account of the increase in NFC credit risk stemming from rising prices and supply disruptions, a moderate deterioration in NFC loan quality has been projected under the baseline scenario. However, it will be unevenly spread across industries and credit institutions. Considerable differences may exist not only between industries but also within a single industry. The businesses dependent on commodities previously imported from the countries engaged in the warfare, the firms that have to change their markets and energy-intensive companies face the most significant increase in credit risk. Industries that are able to pass on cost increases to consumers will have a better capacity to absorb rising production and input costs.

It is projected that the transportation sector will be most affected⁹³. High risks are already present in the accommodation⁹⁴ and food service industry, which has already been hit hard by the restrictions related to Covid-19. Both the considerably higher energy prices and the need to replace some commodities, which were

⁹³ The development of this sector will also largely hinge on the adoption of the Mobility Package (Regulation (EU) 2020/1054 of the European Parliament and of the Council).

⁹⁴ In the stress test, the loans granted to NFCs from Sector L that includes hotel owners, have been added to this sector.

imported from Russia and Belarus before the war, with more expensive analogues represent a challenge for the manufacturing industry. However, the situation in this sector is very heterogeneous. All subsectors related to metalworking (which are badly affected by the consequences of the war and sanctions), as well as some large energy-intensive companies will face high risks. The situation will also be difficult for companies for which Russia and Belarus were an important market before the warfare in Ukraine. The switch to the new markets will take time, and there is a risk of reduced turnover in the short term. Therefore, in the stress test, a heightened PD has been assigned for NFCs whose share of exports to Russia exceeds 50%. The above NFCs include several manufacturing and trade companies related to chemistry and pharmaceuticals. Construction, where surging prices of building materials and supply bottlenecks have a detrimental effect on firms' financial health, also faces heightened risks. An uptrend in construction costs has made businesses withhold the launch of new projects which will also lead to a decline in their turnover. In the energy sector, increased risks can be seen in the sub-sector of gas sales through mains. The assumptions about PD on various groups of loans are shown in Table 2.1.

Table 2.1

CREDIT RISK PARAMETERS BY LOAN GROUP UNDER THE BASELINE SCENARIO
(%)

Loans to residents of Latvia	Loans to households	Loans to NFCs		
		Transportation and storage, accommodation and food service activities, trade of gas through mains, metalworking, fabricated metal products, businesses with a high share of exports to Russia, large energy-intensive businesses	Manufacturing ⁹⁵ , construction	Other sectors
Probability for a performing loan or a loan past due less than 90 days to become a loan past due over 90 days within a period of one year (PD)	1.8	10	5	2
Probability for an unlikely-to-pay loan to become a loan past due over 90 days within a period of one year	7.2	40	20	4
Probability for a performing loan or a loan past due less than 90 days to become an unlikely-to-pay loan within a period of one year	1.8	10	5	2

⁹⁵ Excluding metalworking, fabricated metal products and loans to firms with a high share of exports to Russia.

The baseline scenario assumes that all loans granted to customers from Russia and Belarus become NPLs. However, when writing them off, account has been taken of previously accumulated provisions and real estate collaterals located in Latvia or in other EU countries to which the 30% haircut has also been applied. It is assumed that PD for customers from Ukraine is 50%, but the principles for calculating losses are the same as for those for customers from Russia and Belarus.

The baseline scenario of the market risk component does not contain significant shocks, and changes in the securities portfolio do not result in additional losses, assuming that even in cases of turmoil in security markets, they will return to the present conditions over the stress test period.

Under the stress scenario, the energy price shock, supply chain disruptions and commodity substitution problems lead to an economic recession in the EU,

reducing foreign demand by 10%. As a consequence, demand shrinks (by 25%) and investment declines (by 25%), the Latvian economy plunges into recession and GDP contracts by 5.9% in 2022. Borrowers' solvency deteriorates (particularly in the economic sectors most affected by the shock) and unemployment increases which, in combination with the mounting consumer prices and higher interest rates, weigh on households' ability to service their debt. The credit risk parameters assumed under the scenario are reflected in Table 2.2.

In the stress test, the overall increase in NPLs is assessed according to the credit risk model results. Also, in the stress scenario, the assessment of NPL growth for different credit groups differs according to experts' assumptions about the credit risk of each credit group or sector, as shown in Table 2.3. Under the stress scenario, the ranking of sectoral vulnerability remains unchanged. Major macroeconomic shocks aggravate the situation across all sectors, particularly in the vulnerable sectors or companies.

Table 2.2

PARAMETERS OF THE MACROECONOMIC STRESS TEST

(%; percentage points)

Macroeconomic and credit risk parameters	Bāzes scenārijs	Stresa scenārijs
Latvia		
Annual changes in Latvia's GDP in 2022	2.9	–5.9
3-month EURIBOR forecast ⁹⁶	–0.032	–0.032
Probability for a performing loan or a loan that is past due less than 90 days and is not forborne to become a loan past due over 90 days within a period of one year	–	5.0 ⁹⁷
Probability for an unlikely-to-pay loan to become a loan past due over 90 days within a period of one year	–	20.0
Share of the forborne loans that are not NPLs and that will migrate to the category of loans past due over 90 days within a period of one year (%)	–	100
Increase in the share of loans past due over 90 days in the domestic customers' loan portfolio at the end of 2022 ⁹⁸ (percentage points)	2.8	10.5

⁹⁶ Annual average of 3-month EURIBOR by the end of 2022; Eurex Exchange, 28 April 2022.

⁹⁷ For groups of loans without any specific assumptions about the PD.

⁹⁸ Loans that have migrated from the category of "performing loans or loans past due less than 90 days" and from the categories of "unlikely-to-pay loans" and "forborne loans that are not NPLs" to the category "loans past due over 90 days" have been added up.

Table 2.3

CREDIT RISK PARAMETERS BY LOAN GROUP UNDER THE STRESS SCENARIO
(%)

Loans to residents of Latvia	Loans to households	Loans to NFCs		
		Transportation and storage, accommodation and food service activities, trade of gas through mains, metalworking, fabricated metal products, businesses with a high share of exports to Russia, large energy-intensive businesses	Manufacturing ⁹⁹ , construction	Other sectors
Probability for a performing loan or a loan past due less than 90 days to become a loan past due over 90 days within a period of one year (PD)	5	15	10	5
Probability for an unlikely-to-pay loan to become a loan past due over 90 days within a period of one year	20	60	40	20
Probability for a performing loan or a loan past due less than 90 days to become an unlikely-to-pay loan within a period of one year	5	15	10	5

The stress scenario assumes that all forborne loans that are not NPLs will migrate to the "past due over 90 days" category within a year. The rise in NPLs projected by the scenario is applied after the migration.

The stress scenario assumptions with respect to foreign investment are reflected in Table 2.4. As per the stress scenario assumptions, the PD on loans to the borrowers from the Baltic countries is the same as the PD on loans to domestic customers, but the provisioning ratio is 60%. The PD on loans to customers from other countries is the same as the PD on loans to domestic customers, whereas the LGD has been set at 75%.

Table 2.4

STRESS SCENARIO ASSUMPTIONS WITH RESPECT TO FOREIGN INVESTMENT
(%)

Loans to foreign customers	PD	LGD	Expected loss rate
CIS customers ¹⁰⁰	20	75	15
Customers from Lithuania and Estonia	5.0	60	3.0
Customers from other countries	5.0	75	3.8

⁹⁹ Excluding metalworking, fabricated metal products and loans to firms with a high share of exports to Russia.

¹⁰⁰ Excluding customers from Russia, Belarus and Ukraine.

Unlike the baseline scenario, the stress scenario assumes that it is not only loans to customers from Russia and Belarus that become NPLs **but also all loans for which Russia and Belarus have been indicated as risk transfer countries**¹⁰¹. However, when writing them off, account has been taken of real estate collaterals located in Latvia or in other EU countries, as well as the 30% haircut has also been applied to these collaterals.

To ensure a more accurate reflection of the potential losses arising from investment in the CIS countries, the amount of investment made in these countries has been adjusted according to the Credit Register data on the country risk transfer.

The stress scenario for the **market risk component** has been developed by using the securities portfolio as at the end of December 2021 as a reference point (a common reference point is used for the stress tests of other risks). For the market risk, **a global market shock scenario has been modelled under the stress scenario (see Table 2.5) where significant shocks have been applied to government and corporate**

¹⁰¹ I.e. an indirect exposure to the risk related to Russia and Belarus has also been taken into account.

securities' risk premia, while smaller shocks have been applied to stock indices. Constant initial amount of securities has been assumed for impact calculations. The

discount rate of 100% (due to the war) has been applied to the value of securities issued by Russian issuers, and these securities have been reported separately.

Table 2.5

PARAMETERS OF MARKET RISK STRESS TEST UNDER THE STRESS SCENARIO

Instrument	Original value (%)	Stress scenario (changes; basis points)
Benchmark yield curve		
Securities in euro (1 month–10 years)	–0.3 to –0.7	–71 to +17
Securities in US dollars (1 month–10 years)	0.1 to 1.4	–53 to 0
Risk premium of the key categories ¹⁰²		
Investment class (government, corporate sector)	0.4 to 0.6	41 to 200
High yield class (government, corporate sector)	2.9 to 5.3	131 to 517
Risk premium of three major issuers	0.5 to 1.2	0 to 131
Other market shocks	Stress scenario (changes compared to the baseline value; %)	
USD/EUR		–2.8
RUB/EUR		–0.8
Equities, funds and other instruments (excluding financial derivatives)		–4
Financial derivatives		–50

Table 2.6

AGGREGATED MACROECONOMIC STRESS TEST RESULTS

Indicator	Baseline scenario	Stress scenario
Estimated losses (millions of euro)	281.8	776.7
Additionally required provisions (% of total credit institution assets)	1.4	3.7
Total capital ratio		
Number of credit institutions with the total capital ratio below 8%	0	3
Additionally required capital (millions of euro)	0	6.6
Tier 1 capital ratio		
Number of credit institutions with Tier 1 capital ratio below 6%	0	2
Additionally required capital (millions of euro)	0	7.7
CET1 capital ratio		
Number of credit institutions with CET1 capital ratio below 4.5%	0	2
Additionally required capital (millions of euro)	0	4.3

¹⁰² The spread of the securities yield vis-a-vis the respective currency's benchmark. No risk premium shock is applied to German and US government bonds.

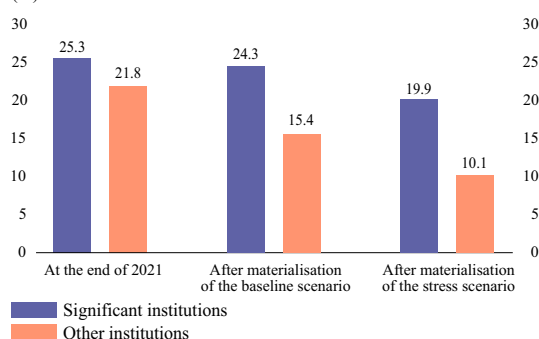
Table 2.6 features the aggregated **stress test results**.

Under the **baseline scenario** assumptions, it is expected that the estimated total losses could reach 281.8 million euro or 1.4% of the total credit institution assets. The losses in the baseline scenario are basically driven by losses arising from investment in the countries

involved in the warfare and to a lesser extent – by the projected additionally required provisions for the resident loan portfolio and also by the fact that in some credit institutions the actual level of provisions for loans past due over 90 days does not reach the provisioning rate used in the stress test.

Under the stress scenario, the share of loans past due over 90 days in the domestic loan portfolio would increase by 10.5 percentage points by the end of 2022. In the event of the stress scenario materialising, the estimated total losses could reach 776.7 million euro or 3.7% of the total credit institution assets. Losses arising from market risk would amount to 19.0% of the total losses, while those from investment in Russia, Belarus and Ukraine would stand at –28.6%¹⁰³. Meanwhile, losses arising from domestic loans and loans to customers from other countries would account for 52.4%. Under the stress scenario, three credit institutions face capital shortage. No systemically important credit institution is among them. Chart 2.44 reflects the amount of the average weighted Tier 1 capital in significant and other credit institutions.

Chart 2.44
TIER 1 CAPITAL RATIOS UNDER STRESS TEST SCENARIOS* (%)



* The significant credit institutions are Swedbank AS, AS Citadele banka and AS SEB banka.

It is worth stressing that the **assumption that customers from Russia and Belarus, as well as those whose country risk has been transferred to Russia and Belarus, will fail to fulfil their obligations at 100% is rather conservative**. On the one hand, in the event of direct investment in Russia and Belarus, the transfer of the country risk to other countries is not taken into account, e.g. there are a number of loans whose risk is transferred to Latvia (e.g. a firm's economic activity takes place in Latvia), thus reducing default risk. On the other hand, it has been assumed under the stress scenario that all loans, whose country risk has been transferred to Russia and Belarus, are also not repaid. The country risk has been transferred also taking account of factors such as the country where the collateral is registered and the country where the guarantor is situated. Indeed, the location of the collateral or guarantor in Russia or Belarus increases the risk of losses, but the PD might turn out to be lower than 100%.

¹⁰³ Losses arising from investment in securities and shares of these countries have been included.

3. MACROPRUDENTIAL POLICY

- *As of early 2023, the macroprudential institutional framework is changing in Latvia – Latvijas Banka will become an institution that defines and implements the macroprudential policy.*
- *The set of current macroprudential measures has remained unaltered; however, there have been some changes in their scope and rate.*
- *According to the cyclical systemic risk assessment, an increase in the CCyB requirement for the purpose of cyclical risk mitigation is, for the time being, not necessary in Latvia. Furthermore, the borrower-based measures are in place to mitigate the cyclical risk. However, providing a lending to households experiences a surge, targeted measures to mitigate the potential imbalance might be considered.*

Changes in Latvia's macroprudential institutional framework

According to the Credit Institution Law, the FCMC is the institution designated for applying the macroprudential measures in Latvia. Latvijas Banka conducts an assessment, issues recommendations and assists in the implementation of the required macroprudential measures to support the overall financial stability. The measures are discussed at the Macroprudential Council, a cross-institutional consultative forum¹⁰⁴.

Latvia's macroprudential institutional framework will change as of 1 January 2023. Along with the integration of the FCMC into Latvijas Banka and the related amendments to the Law on Latvijas Banka, in the future, **Latvijas Banka will be the institution that defines and implements the macroprudential policy and also applies the macroprudential policy measures.** Decisions on these measures will be made by the Council of Latvijas Banka. To achieve the ultimate macroprudential objective more successfully, Latvijas Banka will continue its cooperation with the Ministry of Finance of the Republic of Latvia at the Macroprudential Council, a collegial cross-institutional consultative forum. Upon the integration of the FCMC

into Latvijas Banka, the Macroprudential Council will be transformed from a trilateral into a bilateral consultative cooperation forum (of Latvijas Banka and the Ministry of Finance).

Current macroprudential policy measures and their changes

The set of currently active macroprudential measures in Latvia consists of O-SII capital buffer requirements and borrower-based measures (see Table 3.1).

Since the publication of the Financial Stability Report 2021, **the set of currently active macroprudential policy measures has remained unaltered; however, the FCMC has implemented some changes in their scope and rate.**

Firstly, as of 1 January 2022, **credit institutions authorised in other Member States that are authorised to offer financial services in the Republic of Latvia, are also required to apply these borrower-based measures** in the creditworthiness assessment process of natural persons covered in the Regulation on Credit Risk Management¹⁰⁵. The amendment was introduced to diminish the potential regulatory arbitrage and strengthen the Latvian internal financial and capital market, as well as to contribute to effective credit risk management and prudent assessment of borrowers' creditworthiness. In late 2021, loans granted by credit institutions registered in another Member State to households in Latvia exceeded 31% of the total portfolio of loans granted to domestic households by all credit institutions.

¹⁰⁵ FCMC Regulation No. 242 on Credit Risk Management, <https://likumi.lv/ta/id/320095-kreditriskas-parvaldisanas-normativie-noteikumi>.

¹⁰⁶ The amendments to Paragraph 3 of Section 6 of the Credit Institution Law that were adopted on 29 April 2021 oblige the credit institutions of other countries providing financial services in the Republic of Latvia under freedom of establishment and freedom to provide services to comply with the regulation stipulated in Paragraph 1 of Section 34.2 in credit risk management in relation to the application of borrower-based measures to assessing the creditworthiness of natural persons in accordance with FCMC Regulation No. 242 on Credit Risk Management.

¹⁰⁴ <https://www.bank.lv/en/tasks/financial-stability>.

Table 3.1

LATVIA'S CURRENTLY ACTIVE MACROPRUDENTIAL MEASURES

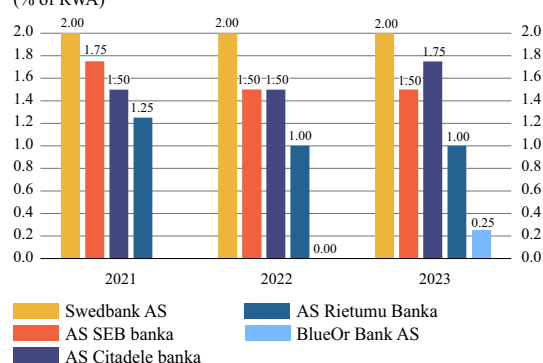
Measure	Rate
O-SII capital buffer	Swedbank AS – 2% AS Citadele banka – 1.75%* AS SEB banka – 1.50% AS Rietumu banka – 1.00% BluOr Bank AS – 0.25%*
Loan-to-value (LTV) ratio	90% for all loans to consumers exceeding 100 minimum monthly wages and secured by a real estate mortgage. 95% for loans to consumers secured by a real estate mortgage and state guarantee in accordance with the Law on Assistance in Solving Apartment Matters. 70% for buy-to-let loans. 70% when, according to the assessment of the borrower's creditworthiness, the declared income from real estate (which is not the collateral for the respective housing loan) exceeds 20% of all income.
Debt-to-income (DTI) ratio ¹⁰⁷	6 times
Debt service-to-income (DSTI) ratio ¹⁰⁷	40%
Other evaluation conditions of the borrower's solvency	For buy-to-let loans, when assessing the borrower's creditworthiness, a maximum of 70% of the projected income from real estate may be taken into account.
Maximum maturity limits for loans to natural persons ¹⁰⁷	30 years for housing loans, 7 years for consumer credit (including financial leasing transactions).

* The requirements, which have been increased, will take effect as of 2023.

Secondly, in the annual review of the list of O-SIIs **five O-SIIs have been identified instead of the former four O-SIIs; also the O-SII capital buffer requirements have been reviewed and changed.** BluOr Bank AS was identified as an O-SII for the first time and added to the list of former four O-SIIs (Swedbank AS, AS SEB banka, AS Citadele banka and AS Rietumu Banka). Taking account of the credit institution's proximity to the identification threshold, the lowest-level of the O-SII buffer (0.25%) has accordingly been applied to it.

In the light of the changes in the size and systemic importance of other O-SIIs, **the capital buffer requirements for O-SIIs were reviewed** for the first time since the onset of the pandemic. These requirements were reduced by 0.25 percentage points for two O-SIIs and increased by 0.25 percentage points for one O-SII

Chart 3.1
LATVIA'S O-SIIs AND THEIR CAPITAL BUFFER REQUIREMENTS
(% of RWA)



(see Chart 3.1). The reduced requirements entered into force at the moment of their announcement, while the increased requirements will take effect as of 1 January 2023.

¹⁰⁷ The FCMC has provided institutions with an option to apply a partial tolerance margin, i.e. the tolerance margin may not exceed 10% of the institution's new loans to natural persons in any given calendar quarter.

Changes in microprudential and regulatory requirements for capital

In the context of total capital requirements (see Chart 3.2), it should be noted that under the annual supervisory review and evaluation process the year 2021 saw a revision of and overall increase in the Pillar 2 capital requirements and the credit institutions under the FCMC supervision received for the first time indicative estimates of the Pillar 2 guidance (hereinafter referred to as "P2G")¹⁰⁸ based on Latvijas Banka's stress test results and taking into account the operating income or losses before provisions under stress as modelled by the FCMC.

The minimum leverage ratio requirement has entered into force. As of 28 June 2021, the CRR II requirements have been applied in the EU. The CRR II introduces the minimum leverage ratio requirement of 3% in addition to the risk-weighted capital requirements. This requirement is more restrictive towards the credit institutions with low risk weights that widely use internal ratings models for calculating capital requirements. The risk weights of Latvia's credit institutions are higher than elsewhere in the EU, and their average leverage ratio exceeds the minimum requirement more than three times.

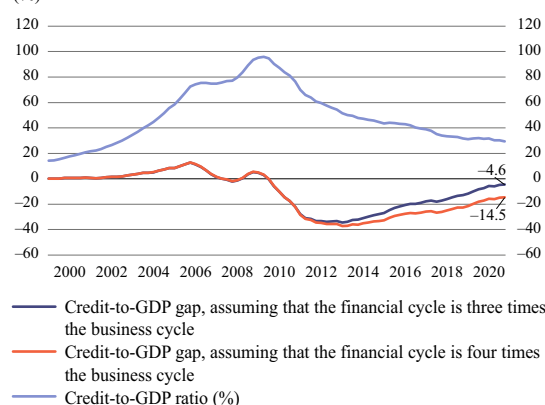
With the uncertainty caused by the Covid-19 pandemic diminishing, the recommendations for limiting the pay-outs of dividends were no longer extended in autumn 2021¹⁰⁹ and the ECB gradually cancelled the operational relief measures introduced during the Covid-19 pandemic¹¹⁰: as from March 2022, the relief measure to exclude central bank exposures from their leverage ratios expired, and from 2023 the P2G will again become binding, which previously together with the capital conservation buffer could be used to absorb losses caused by the pandemic.

¹⁰⁸ The P2G capital level is set for each credit institution individually by the supervisory authority in addition to its binding own funds requirements. The P2G serves as a buffer to withstand financial stress. The amount of the P2G is established based on the results of credit institution's stress test. The P2G must be covered with CET1 capital.

¹⁰⁹ [Nepagarina rekomendācijas par dividendžu ierobežošanu \(fktk.lv\)](https://www.fktk.lv) ("Recommendations for limiting dividends not extended"); available in Latvian only.

¹¹⁰ [ECB will not extend capital and leverage relief for banks \(europa.eu\)](https://www.europa.eu).

Chart 3.2
CREDIT-TO-GDP RATIO AND ITS DEVIATION FROM THE LONG-TERM TREND*



* The CCyB rate is set using the assessment approach recommended by the ESRB with the smoothing parameter $\Lambda = 400k$, assuming that the duration of the financial cycle is four times the duration of the business cycle. The chart shows the credit-to-GDP gap based on the narrow definition of loans, i.e. the data of credit institution balance sheets.

It should also be noted that the resilience of the financial system to shocks will be facilitated by the fact that from January 2022 intermediate targets for the minimum requirement for own funds and eligible liabilities (MREL)¹¹¹ will become binding on significant credit institutions. Full compliance will be required from 2024.¹¹² To ensure the compliance with MREL, one O-SII has already issued bonds that in the event of its financial distress can be used for the chosen resolution strategy.

Limiting the systemic cyclical risk and establishing the CCyB

Overall, the systemic cyclical risk to financial stability remains limited. The pace of domestic lending is far from excessive – the NFC lending is still decreasing, while household lending has picked up from a protracted low level. The debt of the private non-financial sector remains very low. Although the rise in real estate prices is significant, it is not primarily linked to the strong growth of lending (see the Section on real estate). Currently, the cyclical risk assessment should be viewed in the context of a deteriorating

¹¹¹ The MREL requirement is the minimum amount of equity and liabilities convertible to equity that would allow an institution to implement the most appropriate resolution strategy.

¹¹² In the case of significant institutions, MREL is set higher than the amount of loss absorption, i.e. the recapitalisation amount is also added and the highest leverage ratio is taken into account in the establishment of the MREL requirement.

macrofinancial situation and high uncertainty owing to the war in Ukraine, as well as changes in the monetary policy of central banks. The war in Ukraine has not substantially diminished the demand for housing among Latvia's households. Thus, it cannot be ruled out that the cyclical risks to the household lending and real estate components could still see a rise. However, the current uncertainty is too high to make reliable predictions about the future cyclical development.

The CCyB guide – **the credit-to-GDP gap – remains strongly negative**. In late 2021, it was –14.5% according to the narrow definition of loans and –30.4% according to the broad definition of loans (for the purposes of the financial accounts). Nevertheless, it should be noted that the signalling role of the credit-to-GDP gap is lessened by the relatively short time-series of the available data, which is furthermore also significantly affected by the substantial increase in the credit-to-GDP ratio before the global financial crisis and the following protracted period of continued low lending that limits the possibility to determine a true long-term trend. During the pandemic, it was also hampered by the denominator (GDP contraction) effect. Moreover, the deviation assessment is largely dependent on various assumptions, including the assumption about the duration of the business and financial cycles. According to the ESRB recommendation, it is assumed that the duration of the financial cycle¹¹³ is, on average, four times the duration of the business cycle. Assuming that the duration of financial cycles is becoming increasingly shorter and evaluating the deviation of credit-to-GDP ratio from its long-term trend with an assumption that the duration of the financial cycle exceeds the duration of the business cycle by, on average, three and not four times, the credit-to-GDP gap is already much closer to the threshold values that would require a positive CCyB (see Chart 3.2). Nevertheless, it should be noted that the duration of the financial cycle may vary depending on the country, thus the credit-to-GDP gap should be evaluated together with other cyclical risk indicators.

¹¹³ The duration of the financial cycle is the time period between two systemic crises that can last, on average, from 5 to 20 years. The median of the duration of the financial cycle fluctuates around 15 years. The business cycles are shorter and reflect the phases of economic growth and slowdown.

Chart 3.3
LATVIA'S CCRI
(points)

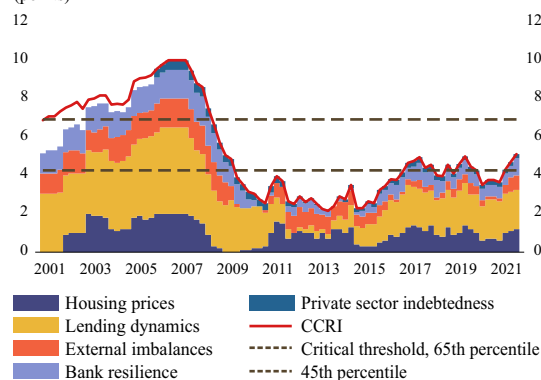
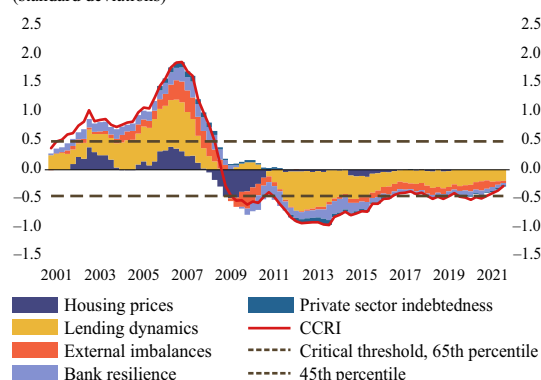


Chart 3.4
STANDARDISED CCRI
(standard deviations)



Considering the CCyB guide shortcomings, **in the current review of the EU macroprudential framework (see Box 3.2) there is a debate about how to reduce the role of the credit-to-GDP gap in the setting of the CCyB rate** as the primary guide to setting the CCyB rate and how to enhance the role of other indicators in determining the cyclical risk.

To assess the systemic cyclical risk, Latvijas Banka has in addition developed a composite cyclical risk indicator (CCRI¹¹⁴). This indicator **has increased** from 3.75 points in the fourth quarter of 2020 to 5.1 points in the fourth quarter of 2021 (the maximum cyclical risk indicator value is 10 points; see Chart 3.3). Meanwhile, the standard deviation of the standardised cyclical risk indicator was –0.3 relative to the maximum standard deviation observed in the first quarter of 2007 (1.7; see Chart 3.4). A rise is recorded in all subcomponents of

¹¹⁴ See the Appendix on the CCRI methodology "Composite Cyclical Risk Indicator: Alternative Guide to Countercyclical Capital Buffer" to Latvijas Banka's Financial Stability Report 2020.

the CCRI; however, the overall **value of the CCRI does not exceed the fluctuations observed during the last five years.**

Based on the cyclical risk assessment, as well as taking account of the overall sluggish lending, the raising of the CCyB requirement for the purpose of mitigating cyclical risk is, for the time being, not seen as necessary in Latvia.

At the same time, taking into account the fact that significant shocks can occur unexpectedly and under such circumstances it is useful to have capital buffers that can be used to absorb shocks and continue lending, **discussions concerning a timely build-up of the CCyB, not only to mitigate the rising cyclical risks but also to facilitate bank resilience and support the credit supply in times of crisis** by flexibly reducing the buffer requirements, **are becoming increasingly important** in Europe. Taking this into account, a growing number of countries have begun to proactively set a positive CCyB requirement before the cyclical risk has started to rise, by splitting the CCyB requirement into a fixed, independent from the cycle phase component (to be released only during a crisis) and the cyclical CCyB component determined in accordance with the cycle in addition to the fixed CCyB component (the closest examples: Estonia (committed to sustain the 1% CCyB requirement during a neutral phase of a cycle) and Sweden (plans to sustain the 2% CCyB requirement during a neutral phase of a cycle)).

Increasing the CCyB or other capital buffers is easier and less costly for the economic growth if the right conditions are in place, i.e. lending development is healthy, credit institutions have sufficient voluntary capital buffers to accommodate higher requirements, their profitability prospects are good and they are not threatened by unfavourable macroeconomic forecasts and uncertainty. The high uncertainty caused by the war in Ukraine has raised the issue of how to treat uncertainty when making decisions related to macroprudential policy and find the most appropriate moment for a preventive build-up of the requirements in order to timely strengthen the resilience of credit institutions.

Overall, the voluntary capital buffers of Latvia's credit institutions are high; however, they are uneven across

various credit institutions. The ability to absorb shocks is subsequently uneven as well, as also confirmed by the stress test results. The profitability of credit institutions is generally good; nevertheless, the profitability risks have increased due to the macrofinancial risks. The NFC lending has been very weak for a long period of time mainly due to structural factors. A downward trend in confidence and macrofinancial deterioration due to the war, the sanctions, price rise and supply bottlenecks could hamper the NFC lending further and increase the credit risk.

Taking account of the high uncertainty and increasing credit risk, microprudential measures facilitating a timely loan reclassification, appropriate provisioning and caution in the distribution of profit play an important role.

If, however, the gap between the NFC and household lending trends widens notably, one of the risk mitigation measures might be setting a targeted capital requirement, for instance, a sectoral systemic risk buffer for exposures to natural persons in Latvia secured by real estate. Lately, this approach (setting a systemic risk buffer for a certain exposure sector) has been chosen by increasingly more countries (for instance, Lithuania, Germany, Slovenia, Belgium).

The risk that the standards of lending for house purchase might become overly loose and lending for house purchase might turn excessive is mitigated by borrower-based measures in Latvia, as they operate as permanent structural standards throughout the cycle. In Latvia, the new borrower-based measures took effect on 1 June 2020, a month before the state support programme for families with children was broadened¹¹⁵. After the broadening of the programme,

¹¹⁵ The guarantee available under the programme has been increased for families with at least four children, as well as vis-à-vis loans financing purchases of higher energy efficiency housing. In addition, a support programme "Balsts" was launched for families with many children. Families with an average income of no more than 17 thousand euro per year and per family member, which do not own any housing, are entitled to a house purchase subsidy of up to 12 thousand euro; however, this subsidy may not exceed 50% of the total house purchase costs. The maximum subsidy amount is available if the housing to be financed has an energy efficiency level close to zero. The "Balsts" subsidy payment is available for loans issued starting with July 2020.

the amount of state-guaranteed loans for house purchase rose (see the Section on lending). The active uptake of the programme reduces the tightness of the LTV 90% requirement referred to in the Consumer Rights Protection Law (the maximum LTV requirement for the participants of the programme – families with children – stands at 95%)¹¹⁶. In such circumstances, other borrower-based measures balance out an easing of the LTV requirement for some borrowers.

The substantial increase in state-guaranteed loans for house purchase suggests that if the pace of lending for house purchase becomes too fast the conditions of the state support programme should be reviewed (for Latvijas Banka's proposals on the review of the state support programme, see the Section on real estate). One of the potential measures might be to limit the share of loans with LTV above 90% in the newly issued loans to households by credit institutions.

Meanwhile, to reduce the risk of the excessive rise in housing prices, largely facilitated by the imbalance between the demand and supply, **the problems related to the insufficient housing supply should be addressed** (see the Section on real estate).

Macroprudential policy trends abroad

To gain a broader context, it is important to be aware of macroprudential policy developments in other countries. To mitigate residential real estate market risks, **several countries, particularly those that had eased the macroprudential measures during the crisis, have started to tighten them:**

- the Bank of Lithuania has introduced a 70% LTV requirement for the second and subsequent mortgages¹¹⁷ and a 2% sectoral systemic risk buffer requirement for retail exposures to natural persons that are secured by residential property. With NFC lending improving, this requirement might be gradually replaced with the CCyB requirement;

- Estonia has decided to sustain the CCyB of 1% during a neutral phase of a cycle;
- Bulgaria, Czech Republic, Denmark, Iceland, Norway, Sweden, France, Croatia, Romania and Germany have also decided to increase the CCyB requirement;
- similarly to Lithuania, a sectoral systemic risk buffer requirement for exposures to natural persons that are secured by residential property has been introduced by Germany, Slovenia and Belgium;
- several countries have introduced new or tightened the existing borrower-based measures (some of these measures involved the restoration of the requirements eased during the pandemic to their pre-pandemic level) – for example, Sweden (housing loan amortisation requirements), Finland (LTV), Norway (the tolerance margins for borrower-based requirements), Iceland (LTV and DSTI), Cyprus (LTV), Czech Republic (LTV, DSTI, DTI), Portugal (loan maturity limits), Malta (clarification of the regulatory framework).

In its public Financial Stability Review¹¹⁸, the ECB has also noted the benefits of timely measures to reduce medium-term risks and increase resilience, where possible. However, the time for introducing the measures and their scope should be carefully considered in accordance with the macroeconomic conditions.

The unexpected large-scale shocks (the Covid-19 pandemic, the war in Ukraine, the substantial price increase) have highlighted the discussions on the efficiency of the macroprudential framework. It is becoming increasingly important for the stability of the financial system to include the risks such as climate change and threats to cybersecurity in the scope of the macroprudential policy. These issues have also been incorporated into the ongoing review of the EU macroprudential framework (see Box 3.2).

It should be added that in October 2021 the EC submitted proposals to the European Parliament and the Council of Europe on the amendments to the CRR II and CRD V that are used to introduce Basel III Reforms into the EU framework (see Box 3.1).

¹¹⁶ Under the programme, 28% of all new loans for house purchase were granted with LTV above 90%. Indeed, the breakdown of the LTV value remains stable and has not deteriorated since 2019.

¹¹⁷ This requirement does not apply if the first loan for house purchase has already been largely depreciated (LTV < 50%).

¹¹⁸ [Financial Stability Review, May 2022 \(europa.eu\)](https://www.ecb.europa.eu/press/pr/fsr/2022/01/html/index.en.html).

BOX 3.1. LAST STEPS OF BASEL III REFORM

Following the global financial crisis, the EU carried out major reforms in the credit institution regulatory framework based on the supervisory standards developed within the Basel III reform by the Basel Committee on Banking Supervision (BCBS) in 2010. The implemented reforms have considerably reinforced the resilience of the financial sector to economic shocks, i.e. when the crisis induced by the Covid-19 pandemic hit the financial system, it was much better equipped than at the beginning of the global financial crisis.

However, the implementation of Basel III is ongoing, since several elements still have to be incorporated in EU legislation. In 2019, the EC committed itself to prepare a proposal for the development of a legislative act that would implement BCBS reforms¹¹⁹ in the EU prudential regulation. The Covid-19 pandemic delayed the preparation of such a proposal, and the BCBS took a decision to postpone the pre-agreed deadlines for the implementation of the remaining Basel III reform elements for a year. **In October 2021, the EC published a proposal for amending the EU credit institution regulatory framework, and in January 2022 it was submitted to the European Parliament and the Council.**

The reform proposal drawn up by the EC is very broad therefore this box focuses only on the most important changes with regard to setting the capital requirements for credit risk. Capital requirements may be set both by employing a standardised approach and the models based on internal ratings (so-called internal models). When introducing Basel III standards, the EC proposal envisages **making the standardised approach more sensitive to the risks taken by credit institutions**, i.e. the introduction of new exposure groups with more detailed risk weights. Meanwhile, **the capital defined by means of the internal ratings based approach will not be allowed to vary so widely from the capital amount defined by the standardised approach anymore.**

The most significant changes will affect the credit institutions that set capital requirements according to internal models (the credit risk capital requirements have been defined so as to cover the possible losses modelled according to historical observations). However, historical observations may not give a full picture of the potential losses in the future. To prevent deficiencies of such models, it has been envisaged to set the minimum result of internal models or so-called output floor (OF) for these credit institutions. The OF will specify the extent to which capital set by internal models, may differ from the capital requirement in accordance with the standardised approach.

The OF element provides that the total exposure amount set by internal models shall be at least 72.5% of the total exposure amount set by employing the standardised approach. This implies that credit institutions with relatively low risk weight portfolios will have to increase capital for credit risk due to historically low losses, although the credit institution's self-assessment would not require doing so. Thus, the application of the OF also reduces the model risk that would allow for extremely low risk weights, and, in turn, low capitalisation would make credit institutions vulnerable.

While capitalisation of EU credit institutions is overall satisfactory, **the horizontal analysis of their internal models revealed a large risk weight dispersion for credit institutions with similar business models.** One of the goals concerning the OF introduction would be the increase in comparability of credit institutions' capital ratios and their reliability, as well as the more level playing field for credit institutions in the single market.

¹¹⁹ The BCBS agreed on this reform package in December 2017, and in March 2018 the G20 finance ministers and governors of central banks committed to implement them to the fullest extent, in a timely and consistent manner.

To prevent a sharp increase in capital requirements for credit institutions whose internal models provide for relatively lower capital requirements, the introduction of the OF will take place within a 5-year transitional period commencing on 1 January 2025, starting from a level of 50% and gradually reaching 72.5%. The EC offer also envisages other parallel transitional periods for the implementation of changes to the Basel III framework, including investment in low-risk housing loans, financial derivatives and loans to commercial companies without credit ratings, thus dividing the full effects from the OF introduction into eight years.

To avoid double counting the same risks after the OF entry into force, the designated authorities for setting capital requirements will have to revise them for credit institutions with excessively low risk weights. For the purpose of reducing vulnerabilities of credit institutions, supervisors of several countries have increased Pillar 2 requirements, systemic risk buffer requirements or have tightened risk weight requirements for some assets with particularly low risk weights.¹²⁰

The EC proposal foresees to apply the OF at the highest EU consolidation level together with the capital redistribution mechanism. However, a number of countries consider that the OF also has to be applied to all subsidiaries on an individual basis not only at the highest EU consolidation level. A sub-consolidated application of the OF requirements at member state level could serve as a compromise. At this point in time, the effective prudential requirements have been applied at all consolidation levels (not only at the highest EU consolidation level). Therefore, the application of the OF also to subsidiaries to prevent risks to financial stability would be part of a consistent approach. The approach offered by the EC changes the capacity balance between the home-host supervisory authorities, and it is incompatible with the unfinished banking union. The implementation of Basel III reforms aims at aligning requirements between credit institutions, but the application of the OF only at the highest EU consolidation level favours the credit institutions that are subsidiaries with similar volume of assets and business models compared to the credit institutions without a consolidation group.

Two significant credit institutions of Latvia – Swedbank AS and AS SEB banka employ the internal models for setting capital requirements. Despite the fact that the capital requirement for 80% of risk exposures in both credit institutions is set using risk exposures determined by internal models¹²¹, **the impact of the OF implementation on the above credit institutions is expected to be lower than elsewhere in the EU owing to the relatively high risk weights.**

Specific EU derogations from the Basel Accord have been kept in the EC proposal. For example, the EC proposal retains the SME supporting factor and provides for the possibility of applying a reduced (45%) risk weight (currently 75%) to retail exposures when a number of conditions are met.

The risk weights applicable to exposures secured by real estate will be substantially changed. The risk weights will depend on several conditions: whether the collateral is a mortgage on residential or commercial

¹²⁰ For example, the systemic risk buffer of 9% for exposures secured by real estate in Belgium to natural persons has been set by the National Bank of Belgium for credit institutions that calculate their capital requirements based on the internal ratings approach. The National Bank of the Netherlands has set the minimum risk weight requirement for the calculation of regulatory capital requirements applicable to exposures to natural persons secured by mortgages on residential property located in the Netherlands for credit institutions that calculate their capital requirements based on the internal ratings approach (12% on the loans whose LTV ratio is below 55% and 45% on the remaining part of the respective portfolio). As of 2020, in Norway 20% minimum risk weight floor for exposures to natural persons secured by mortgages on residential property is set for credit institutions with internal models, but in Estonia this floor has been set at 15% since 2019.

¹²¹ See annual reports 2021 of Swedbank AS and AS SEB banka.

real estate, whether the property has been acquired to produce income therefrom, as well as on LTV. Risk weights will be established using either the whole loan approach or the loan-splitting approach. Under the whole loan approach, risk weights are established by applying single risk weight to the entire exposure depending on LTV. Meanwhile, under the loan-splitting approach, risk weights are applied to a portion of the exposure based on LTV, while to the remainder of the exposure – on the basis of the counterparty. Currently, it is only the loan-splitting approach that has been used by EU credit institutions for establishing risk weights.

At present, the risk weights for a residential real estate loan are 35% under the standardised approach provided that LTV of the respective loan does not exceed 80%. According to the new framework, credit institutions will be able to assign reduced risk weights of 20% to the portion of the residential real estate loan whose LTV does not exceed 55%. The risk weights applicable to borrowers will be applied to the remaining non-secured portion of the loan (see Table 3.2).

Meanwhile, the risk weights ranging from 30% to 105% depending on LTV will be applicable to the loans secured by a mortgage on residential or commercial real estate and whose repayment depends on property income. The whole loan approach will be applied to these exposures.

The new changes will have a material effect on Latvian credit institutions, since their loan portfolios largely contain a significant share of mortgages (from 30% up to 80%).

Table 3.2

RISK WEIGHTS FOR EXPOSURES SECURED BY A MORTGAGE ON RESIDENTIAL REAL ESTATE

(%)

LTV interval	≤ 55	55–60	60–70	70–80	80–90	90–100	≤ 100
Loan repayment does not depend on income produced from the property							
Loan-splitting approach to risk weights	20	Risk weight applicable to the borrower ¹²²					
Loan repayment depends on income produced from the property							
Whole loan approach to risk weights	30	35		45	60	75	105

As to commercial companies with external credit ratings, the EC proposal introduces changes, i.e. the risk weight of 75% (previously 100%) is assigned to exposures of companies with credit ratings from BBB+ to BBB-. Although the changes affect only a single risk level, and only some Latvian commercial companies have a credit rating, it is the rating of this particular risk level that is applied to all of them. The present risk weight of 100% will be applied to commercial companies without a credit rating. At the same time, the EC proposal separates risk weights for commercial companies involved in financing operations of specialised projects, and taking account of the project nature the risk weights of 80%, 100% or 130% will be assigned to these financing operations. Currently, the risk weights applied by Latvian credit institutions to such exposures stand at 100% or 150%.

The changes concerning credit risk mitigants foreseen in the EC proposal will affect all Latvian credit institutions; however, it is projected that the overall impact of the changes on their capital will be limited.

¹²² Under the loan-splitting approach, the risk weight of 20% is applied to the secured portion of the loan, i.e. with LTV up to 55%, whereas different risk weights have to be applied to the unsecured portion of the loan. The risk weight assigned to an unsecured loan granted to an individual is 75% or in some cases 100%. The guarantor's risk weight is applied where the conditions of guarantee provision have been fulfilled.

BOX 3.2. REVIEW OF THE EU MACROPRUDENTIAL FRAMEWORK

The EU macroprudential framework (included in the CRD V/CRR II¹²³) should be reviewed every five years. **In November 2021, the EC launched a public consultation on the regular review of the EU macroprudential framework.** Based on the answers received from the ESRB, ECB, EBA, Member States, as well as private sector stakeholders during the consultation, the EC will draft a proposal on the improvements to be introduced into the EU macroprudential framework. It is planned to submit the proposal to the European Parliament and the Council of the European Union in early 2023 (the timing largely depends on the parallel review of the capital buffer requirements at the BCBS and the Financial Stability Board).

The review **aims to further elaborate the framework, ensuring a consistent, proactive, countercyclical and forward-looking use of macroprudential tools in the EU** and contributing to the cooperation between competent authorities.

The review of the EU macroprudential framework focuses on the following issues:

- 1) the capital buffer framework and the necessary improvements;
- 2) the missing or obsolete macroprudential tools;
- 3) the EU internal market considerations within the macroprudential framework;
- 4) the incorporation of the new global (mostly climate and cyber security) risks into the EU macroprudential framework.

Capital buffer framework and the necessary improvements

It is already possible to consider the experience gained during the Covid-19 pandemic crisis in the framework review, since this was the first crisis when the macroprudential framework established after the previous global financial crisis could be tested. The pandemic crisis showed that unexpected shocks could be weathered more successfully if there were flexibly releasable capital buffers at the supervisor's disposal built in due time. During the economic downturn, the buffers help credit institutions absorb losses and maintain loan supply. Overall, **the Member States and the EU supervisory authorities favour a build-up of a macroprudential space or capital buffers that are releasable during a crisis; however, there is no uniform opinion as regards the best way to achieve this.** It could be earlier and more forward-looking build-up of the CCyB requirement, the maintenance of a positive CCyB requirement during a neutral phase of a cycle, a systemic risk buffer that is built in due time and is releasable in a crisis, a capital conservation buffer that is releasable in case of a crisis and/or a combination of various approaches.

It is also **encouraged to make the setting of the CCyB more flexible** by diminishing the role of the credit-to-GDP gap as the leading CCyB guide, by more explicitly defining the possibility to set the CCyB in a more timely manner, as well as by improving the procedures for setting the CCyB.

To improve the usability of the capital buffer framework, an interaction of risk-weighted capital buffer requirements with other capital requirements (leverage ratio) and resolution requirements (MREL) should be reviewed.

¹²³ Directive (EU) 2019/878 of the European Parliament and of the Council of 20 May 2019 amending Directive 2013/36/EU as regards exempted entities, financial holding companies, mixed financial holding companies, remuneration, supervisory measures and powers and capital conservation measures (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32019L0878>). Regulation (EU) 2019/876 of the European Parliament and of the Council of 20 May 2019 amending Regulation (EU) No 575/2013 as regards the leverage ratio, the net stable funding ratio, requirements for own funds and eligible liabilities, counterparty credit risk, market risk, exposures to central counterparties, exposures to collective investment undertakings, large exposures, reporting and disclosure requirements, and Regulation (EU) No 648/2012 (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32019R0876>).

Missing or obsolete macroprudential tools

In many EU countries risks in the housing market are building; however, for various reasons, not in all countries the borrower-based macroprudential measures (LTV, DSTI, DTI, loan maturities, amortisation requirements) that effectively impact a demand for housing loans are established or included in the mandate of macroprudential authorities. Therefore, it is suggested that **the EU legislation should be enriched with the minimum set of the borrower-based measures which should be at the disposal of the Member States' national authorities**. In order for these tools to be more comparable and less complex, it is encouraged to draft their definitions pursuant to a minimum level of harmonisation, while also foreseeing a sufficient flexibility to address national specificities. Overall, the Member States support the incorporation of the borrower-based measures into the EU legislation, provided the setting of these requirements is left in the hands of national authorities.

In the future, it would be **advisable**, where possible, **to observe the so-called activity-based perspective instead of an entity-based perspective**, i.e. in order to avoid supervisory arbitrage and the transfer of risk to other segments of the financial system. Harmonised regulatory requirements for the provision of this product should apply to all financial sector participants (banks and non-bank financial institutions) offering the same product regardless of their institutional status. In this respect, amendments should be introduced not only to the CRD V/CRR II, but also to other EU regulatory acts.

Risk weights have an important role in the calculation of the total capital requirements and consequently also in the resilience of credit institutions. Thus, there is also a systemic risk component present in the establishment of risk weights, particularly concerning exposures that are related to real estate. It is encouraged to establish a new single harmonised macroprudential article dedicated to setting risk weights in the CRR III combining the current specific provisions for determining risk weights for macroprudential purposes.

Internal market considerations

The review provides an opportunity **to make the use of the macroprudential tools more consistent, more efficient, clearer and more convenient**, by further reviewing its compliance with the level playing field principles. For instance, there is a need to review the systemic risk buffer, the framework of tools referred to in Article 458 of the CRR and the reciprocity rules. Also the setting of the O-SII capital buffers should be made more consistent and harmonised. Latvia attaches great importance to reviewing the methodology of the O-SII identification and O-SII capital buffer requirement calibration so that it is possible to tailor the requirement to national specificities. The cooperation between the national macroprudential, microprudential and resolution authorities should also be reviewed.

New global risks

The new global phenomena – climate and sustainability risks, as well as cyber risks – can affect the financial sector at a systemic level; therefore, they should also be in the focus of the macroprudential policy. There have been debates on the way to use the current macroprudential tools (e.g. the sectoral systemic risk buffer and the large exposure limits) for climate risk mitigation and the potential introduction of new macroprudential tools for the purposes of risk mitigation. However, at the same time, it is acknowledged that, prior to introducing new tools into the framework, additional research is needed, as is more intensive work on a more granular and harmonised taxonomy and the availability of climate data.

For the time being, the authorities and the Member States do not share a uniform view on the measures to contain systemic cyber risks in the macroprudential context. One of the proposals involves the setting of a task for the macroprudential authorities to evaluate the maximum cyber risk tolerance level for systemic financial institutions, as well as to extend the mandate of macroprudential authorities regarding the containment of the cyber security risk.

4. DEVELOPMENT AND RISKS OF THE NON-BANK FINANCIAL SECTOR

In 2021, the non-bank financial sector saw a rapid development, with its assets recording an increase of 16.3%. This rise was mainly driven by the growing contributions to the 2nd pillar pension scheme, the high return on investment, as well as the licensing of investment platforms as investment brokers and the reporting of the assets administered and held by them in the non-bank financial sector statistics (at the end of 2021, the assets administered and held by investment brokerage¹²⁴ companies accounted for 586 million euro or 4.6% of the total assets of the non-bank financial sector (see Chart 4.1)). Excluding the assets of these investment brokerage companies, the growth rate of the non-bank financial sector's assets would be 11.0% per annum (i.e. the same level as before the Covid-19 pandemic). An increased activity was recorded in all subsectors of the non-bank financial sector (except leasing companies, in which case the decline in assets was underpinned by a one-off transaction)¹²⁵.

The continuity of accessibility of the services provided by the non-bank financial sector in Latvia's financial system is high as, in the case of a withdrawal of a market participant, the services provided by it to ensure the functioning of Latvia's financial system may be replaced by other market participants. Thus, the non-bank financial sector does not represent any systemic risks to the financial system. The role of Latvia's non-bank financial sector in the financial sector and the economy as compared to other euro area countries is still considerably less important. This is primarily due to the low level of long-term savings of the population: in Latvia, they have accumulated over a shorter period of time as compared to many other euro area countries.

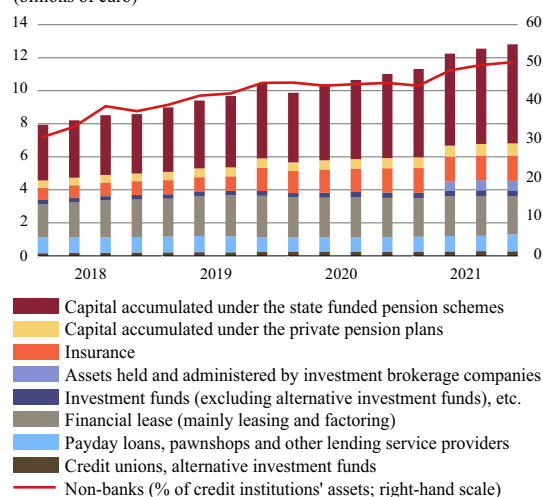
Saving service providers

- *There is an increasing risk that higher inflation will persist longer than anticipated, and this will*

¹²⁴ Statistics reflect all investment brokerage companies (including investment platforms which have obtained an investment brokerage licence).

¹²⁵ The merger of the leasing company OP finance SIA with the Latvian Branch of OP Corporate Bank plc.

Chart 4.1
ASSETS OF THE NON-BANK FINANCIAL SECTOR BY SUB-SECTOR AND IN RELATION TO CREDIT INSTITUTIONS' ASSETS
(billions of euro)



negatively affect the real return on investment of pension funds.

- *Investment of pension funds in Russia is low, but there is an elevated risk that the war in Ukraine and sanctions may indirectly affect pension savings.*
- *It is important to avoid the materialisation of the risk that the 2nd pillar pension savings are voluntarily withdrawn early, thereby increasing the risk of poverty of the population in old age.*

Household savings for retirement account for the largest share of the non-bank financial sector's assets. At the end of 2021, the funds accumulated under the state funded pension scheme amounted to 46.8%, while the assets of the 3rd pillar pension scheme – to 5.7% of the total assets of the non-bank financial sector.

The war in Ukraine has not caused a direct significant pension investment asset value shock. The amount of investment of pension savings in Russia is low. At the end of 2021, investments of the state funded pension scheme and the 3rd pillar pension scheme in securities issued by Russia, including indirect investments made through investment funds, accounted for 0.1% and 0.2%

of their assets respectively¹²⁶. No direct investment in Belarus was made, while in Ukraine, direct investment went only to its issued government bonds whose volume in the state funded pension scheme and the 3rd pillar pension scheme did not exceed 0.1% of their assets. However, the risks to pension savings in relation to the warfare and sanctions intensify indirectly as they are determined by higher inflation, lower economic growth, potential losses by businesses, energy crisis, Russia's unpredictable decisions, etc.

The rise in inflation reduces the pension managers' ability to maintain the purchasing power of savings.

This has a particularly negative impact on fixed income instruments whose real fund flow is declining due to the low bond coupon rates and yields. Typically, investors will also choose less to invest their money in debt security asset classes and will push up the demand for other asset classes, for example, by investing in shares or alternative investment funds which have a better potential to maintain the purchasing power of savings than debt securities as businesses may redirect the increase in prices caused by inflation to consumers in the long term.

There is an increasing risk that amendments to the law providing for the early withdrawal of savings from the 2nd pillar pension scheme by people would be made in Latvia like in Estonia¹²⁷. Such a decision would substantially increase the risk of poverty of the population in old age and the poverty risk in the country in the long term, as well as disagreements among social groups of society. This would also contribute to a rise in the social budget expenditure and, consequently, – an increase in the social tax. Over the short term, this would push up the surging inflation that, in its turn, would adversely affect the purchasing power of all savings. The withdrawal of funds from the 2nd pillar pension scheme would also

increase GDP volatility because of the faster growth of consumption followed by a relative decline in economic activity. Over the short term, this would make income more volatile and reduce the consumption smoothing possibilities throughout the life span.

The state funded pension scheme is still in the phase of the build-up of savings.

In 2021, the contributions to the state funded pension scheme stood 26.1% higher than in the previous year. This was mostly on account of a decline in the registered unemployment rate and an increase in the average gross wage (11.8%). At the same time, the deferral of the social tax payments from furlough benefits and the extension of the tax payment period have reduced the total amount of contributions to the state funded pension scheme; however, they do not represent a substantial share in the total amount of contributions and the deferral of contributions might increase contributions in the future.

With the amount of contributions to the state funded pension scheme increasing, the relative administration costs of the state funded pension scheme continue on a downward trend.

As of 2022, the deductions made by the SSIA for the administration of funds from each contribution to the 2nd pillar pension scheme will be 0.12% instead of the current level (0.18%). Such a decrease in costs increases net contributions by the 2nd pillar pension scheme participants by at least 350 thousand euro¹²⁸ per annum. The decline in costs has followed a gradual path already for several years (0.32% of each contribution in 2014).

In Latvia, a high percentage of young people and also a relatively large number of middle-aged persons participate in age-inappropriate conservative investment plans¹²⁹.

Without using the possibility to make investment with higher expected returns, the 2nd pillar pension capital of these persons at the retirement age will most likely be lower than if they had invested in the plans that are more appropriate for their age (see Box 4.1).

¹²⁶ At the end of 2021, direct investment of the state funded pension scheme in Russia was lower than 1 million euro (investment was made in Russian companies only), while no direct investment of the 3rd pillar pension scheme in Russia was made at all.

¹²⁷ Until March 2022, 10 thousand signatures necessary for submitting the public initiative regarding the voluntary withdrawal of the state funded pension scheme savings to the Budget and Finance (Taxation) Committee of the Saeima of the Republic of Latvia were collected.

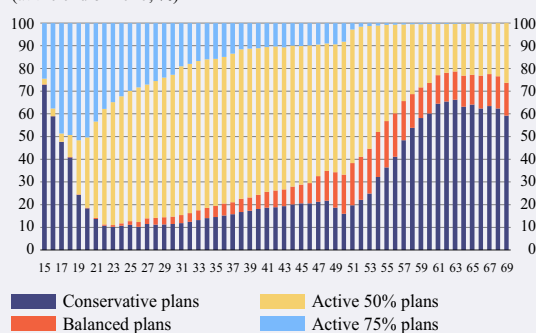
¹²⁸ The estimate is based on the contributions made by the state funded pension scheme participants in 2021 and the relative decrease in costs from 0.18% to 0.12% of each contribution.

¹²⁹ Investment plans in the prospectus of which it is not allowed to invest the assets of the plan in equity securities and similar instruments in terms of risk.

BOX 4.1. THE IMPACT OF THE CHANGE IN THE PROCEDURE WHEREBY THE 2ND PILLAR PENSION SCHEME PARTICIPANT IS SELECTED RANDOMLY FOR THE CONSERVATIVE INVESTMENT PLANS ON THE PROJECTED AMOUNT OF THE CAPITAL

At the end of 2020, approximately three fourths of persons aged 15 and taking part in any of the investment plans participated in the conservative investment plan, but one fourth – in the active 75% investment plan (see Chart 4.2). This suggests that a large number of persons have not chosen their investment plan consciously, which in turn might be explained by the current procedure whereby a person is selected randomly for the conservative investment plans of the 2nd pillar pension scheme if he/she has failed to make a choice himself/herself. This might be the reason why a number of people up to the age of 55 participate in the conservative investment plans rather than in any of the investment plans with funds invested in shares.

Chart 4.2
PERCENTAGE DISTRIBUTION OF THE STATE FUNDED PENSION SCHEME PARTICIPANTS ACROSS DIFFERENT AGE GROUPS BY INVESTMENT PLAN CATEGORY*
(at the end of 2020; %)



* Balanced, active 50% and active 75% investment plans are investment plans in the prospectus of which the maximum allowed investment in equity securities and instruments similar to them in terms of risk does not exceed 25%, 50% and 75% of the investment plan's assets respectively.

If a person does not change the conservative plan for his/her entire life, his/her expected 2nd pillar pension capital following the retirement would be two times¹³⁰ smaller than if he/she had participated in the active 100% investment plan for his/her entire life. Assuming that, even if a crisis occurs in the last year before the retirement and the share prices decline like during the Covid-19 pandemic when the US stock market index S&P 500 decreased by approximately 30%, the expected amount of pension of the person will nevertheless be larger than if he/she had chosen the conservative investment plan.

To provide for the possibility to increase the expected amount of pension in the future, amendments were made to Cabinet Regulation No. 272 of 27 May 2003 “Regulations Regarding the Operation of the State Funded Pension Scheme” in November 2021. Until 2022, persons were selected randomly for any of the conservative investment plans, but, starting from 2022, it will be possible to select them randomly for any of the investment plans with funds invested in shares if these persons fail to make a choice themselves (see Chart 4.1).

Table 4.1

THE PROCEDURE WHEREBY A PERSON IS SELECTED RANDOMLY FOR THE INVESTMENT PLAN OF THE STATE FUNDED PENSION SCHEME IF HE/SHE HAS FAILED TO CHOOSE THE INVESTMENT PLAN HIMSELF/HERSELF¹³¹, WITH THE MAXIMUM RETURN ON INVESTMENT OF THE RESPECTIVE INVESTMENT PLAN IN SHARES REFLECTED

		Investment in shares		
		Until 2022	In 2022	From 2022
Age of the person	Up to 55 years	0%	Up to 50%	Up to 100%
	More than 55 years			Up to 25%

¹³⁰ The calculation is based on the assumption that a person who has started working at the age of 15, retires at the age of 65, his/her wage before taxes has initially been 1000 euro and increases by 3.5% per year, the person makes contributions (6%) to the 2nd pillar pension scheme, with a commission fee of 0.12% of each contribution paid to the SSIA. The annual commission fee for the investment management (including holding) is 0.5% of net assets withheld on a monthly basis, and the average return on the gross investment plan is 2% if the person participates in the conservative investment plan and 5% if the person participates in the active 75% investment plan for his/her entire life.

¹³¹ Each investment manager of the state funded pension scheme may take part in the draw with one investment plan only.

At the beginning of 2021, amendments were made to the Cabinet Regulation¹³² prescribing the procedures by which the manager of funds of the state funded pension scheme shall account and deduct the variable part of remuneration by adding, by analogy, the strategic share index part KAP¹³³ = 0.72 to the investment plans which can invest up to 100% of the investment plan assets in equity securities, thus enabling the investment manager to account and deduct the variable part of remuneration from these investment plans according to the maximum allowed investment in equity securities as per these investment plans.

Investment platforms

- *In 2021, a so-far unsupervised subsector of the non-bank financial sector – investment platforms – was licensed in Latvia. Licences were granted on a condition that platforms will stop assigning loans and will offer investing in financial instruments based on loans.*
- *The quality of loans available through investment platforms was significantly lowered by the shock caused by the Covid-19 pandemic and sanctions. The recovery of non-performing loans is problematic.*

In 2021, a so-far unsupervised subsector of the non-bank financial sector – investment platforms – was licensed in Latvia¹³⁴. Investment brokerage licences were granted to them on a condition that investment platforms have to change their former business model, namely they have to stop offering investments in loans granted by lenders in the form of assignment contracts and start offering financial

instruments to investors instead. In the future, platforms will have to separate the investor's assets from those of the investment brokerage company. This will reduce the risk that in the event of the insolvency of the investment brokerage company the assets of investors may be used to cover the losses incurred by this investment brokerage company. Investors are protected also if a fraud case has occurred or an investor has suffered losses due to the fault of the investment brokerage company, but this protection is not applied if the investor has suffered losses due to fluctuations in the price of financial instruments, the liquidity of financial instruments has decreased or the solvency of the initial borrower has deteriorated.

An investor has the right to receive a compensation from the investment protection fund (up to 20 thousand euro of the amount of the outstanding liabilities) in the event that the fault, insolvency or liquidation of the investment brokerage company is established, as confirmed by the FCMC or according to the effective judgement of the court with regard to the insolvency or liquidation of the investment brokerage company. **But this protection of investors' investment will be effective only with regard to transactions in financial instruments rather than assigned loans¹³⁵.** The licensed investment platforms have to start issuing the new financial debt instruments in 2022.

The Covid-19 pandemic has significantly affected the quality of the investment platforms' assets. A number of the initial lenders faced insolvency, and they were not able to ensure a timely loan repayment to investment platforms' investors. **The war in Ukraine has also considerably worsened the quality of loans issued through investment platforms in Russia,** considering the substantial changes in the Russian economy and its cooperation with the rest of the world after the imposition of sanctions on Russia. The total amount of loans issued via investment platforms in Russia vis-a-vis their total assets maintained and administered by these investment platforms is significant, while in Belarus and Ukraine – insignificant.

¹³² The Cabinet Regulation No. 765 of 19 December 2017 “Procedures by which the Manager of Funds of the State Funded Pension Scheme shall Calculate the Payment for the Management of an Investment Plan and Procedures for the Accounting and Deduction of the Abovementioned Payment”.

¹³³ KAP – the share index part which is specified according to the maximum share of investment in equity securities, alternative investment funds or such investment funds that can make investment in equity securities or other financial instruments similar to them in terms of risk, as provided for in the investment plan prospectus.

¹³⁴ In 2021, four out of seven investment platforms received investment brokerage licences, but two investment platforms withdrew their licence applications. In April 2022, one investment platform was still undergoing the licensing process.

¹³⁵ More information on the protection of investors is available in the [Investor Protection Law](#).

Insurance corporations

- In 2021, the assets of insurance corporations recorded growth, and they were able to ensure a positive return on assets and investment.
- However, the significant pick-up in inflation increases the amount of insurance indemnities and adversely affects the real return on investment of insurance corporations.

In 2021, insurance corporations recovered from the negative impact of the Covid-19 pandemic as their assets and solvency capital ratios¹³⁶ increased (see Chart 4.4), while the return on assets and investment remained positive (see Table 4.2).

Table 4.2
KEY INDICATORS OF INSURANCE CORPORATIONS

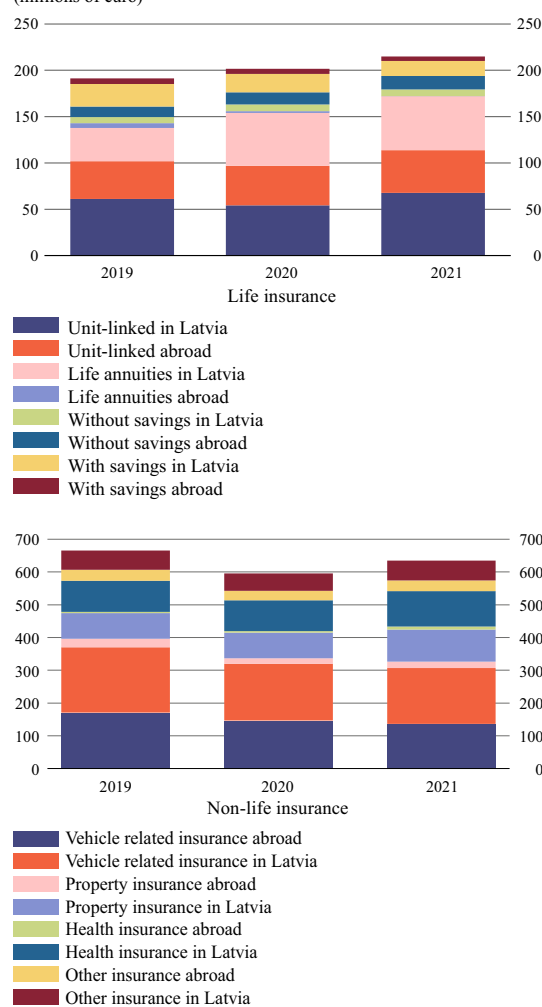
Indicator	2019	2020	2021
Assets (millions of euro)	1408.9	1472.7	1507.86
Return on assets of life insurers (%)	1.1	0.4	1.9
Return on assets of non-life insurers (%)	3.8	7.3	2.9
Return on investments of life insurers (%)	12.6	9.3	18.2
Return on investments of non-life insurers (%)	2.0	5.5	1.1

In 2021, the return on investment of life insurance corporations increased significantly, which was mainly attributable to the investment revaluation profit associated with the favourable financial market conditions. At the same time, the profitability indicators of non-life insurance corporations decreased, owing to the increasing amount of indemnities (by 6.2% in comparison with 2020).

In 2021, Latvia, like other EEA countries, also saw

¹³⁶ The available ratio of equity to the solvency capital requirement. The calculation of the solvency capital requirement is based on the assessment of all the risks an insurance corporation is exposed to, including the assessment of the insurance underwriting risk, the market risk, the credit risk and the operational risk. Each risk model is calibrated according to VaR method, using a 99.5% confidence level over a one-year time horizon; see <https://www.vestnesis.lv/op/2021/7.14>.

Chart 4.3
PREMIUMS WRITTEN BY LATVIAN INSURANCE CORPORATIONS AND BRANCHES OF FOREIGN INSURANCE CORPORATIONS PER YEAR*
(millions of euro)



a rebound in the amount of premiums written as it increased significantly in comparison with the decline caused by the Covid-19 pandemic in 2020¹³⁷ (see Chart 4.3):

- The amount of non-life insurance premiums written rose by 6.5%, though still lagging behind the level of 2019. The growth was mostly driven by health insurance, while the amount of vehicle insurance premiums declined by 3.9% as less new vehicles

¹³⁷ Non-life insurance in EEA countries is experiencing a more pronounced recovery (non-life insurance premiums and life insurance premiums written in the second quarter of 2021 increased by 14.0% and 24% per annum respectively). This, however, was also due to a larger decrease in 2020. <https://www.eiopa.europa.eu/document-library/financial-stability-report/financial-stability-report-december-2021>.

- were registered due to supply chain disruptions;
- The amount of life insurance premiums grew by 6.6% in 2021. The most notable increase was recorded for unit-linked life insurance products. This was largely supported by the increase in household savings recorded during the Covid-19 pandemic and the investment-friendly conditions in the financial markets.

The steep growth in annuity premiums written has come to a halt. This was mainly triggered by the conditions established by SEB Life and Pension Baltic SE as it discontinued this insurance product from July 2021¹³⁸. No growth is expected in the future either as, starting from 2023, it will be allowed to withdraw the annuity capital systematically at a set interval¹³⁹ instead of withdrawing a series of periodic variable payments as it has been the case until now. Given the increasing number of people who retire and who have to opt for adding the 2nd pillar pension savings to the state compulsory unfunded pension scheme or purchasing an annuity policy, it would be necessary to improve the process of issuing annuity contracts by addressing several shortcomings, namely, the high fees, the low return on the management of the funds received from the sold policies, the small manageable capital and the longevity risk management.

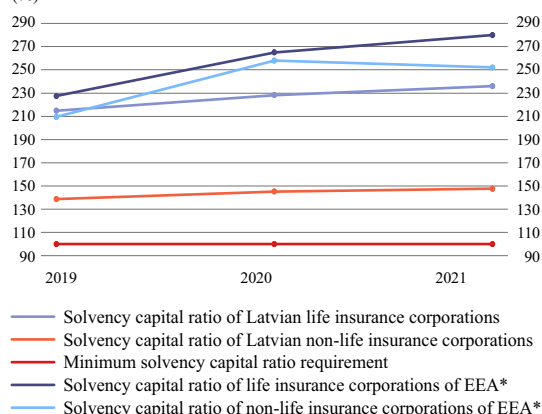
The liquidity structure of insurance corporations' balance sheets has remained broadly unchanged. The share of cash in life insurance corporations has increased, while that of non-life insurance corporations – has decreased. The share of mortgages and loans in the balance sheets of non-life insurance corporations remains negligible (4.8% of total assets).

Like to insurance corporations in other small markets, cross-border cooperation is important to Latvian insurance corporations as it helps diversify and manage risks. At the end of 2021, the share of premiums written abroad in the total amount of non-life insurance premiums written accounted for 30.4%,

¹³⁸ https://leta.lv/archive/search/?patern=m%C5%AB%C5%BEa%20pensij*&item=6C4EBF86-E07B-47DA-B91F-A69C38F347D5&date=-10800,1648332000&mode=wide

¹³⁹ <https://likumi.lv/ta/id/320677-grozijumi-valsts-fondeto-pensiju-likuma>.

Chart 4.4
SOLVENCY CAPITAL RATIO OF LATVIAN AND EU INSURANCE CORPORATIONS (%)



* Data at the end of the second quarter of 2021.

while that of life insurance premiums written – 31.1%.

Investment of insurance corporations registered and supervised in Latvia in Russia, Belarus and Ukraine is negligible, accounting for only 0.05% of the total investment portfolio at the end of the first quarter of 2022 (0.26% at the end of 2021).

The largest risks to the future operation of insurance corporations result from a rise in inflation. This contributes to an increase in compensations paid, for example, for repairs and health care services, and reduces the value of investment (investment is made primarily in the government debt securities whose value is decreasing under the circumstances of high inflation). Moreover, households and businesses may review their expenditure basket and refuse from non-compulsory insurance services due to the shock caused by inflation.

According to EIOPA's assessment, the revaluation of investments in negative direction, the persistently low yield environment, inflation and (to a lesser extent) also cyber risk are the key systemic risks faced by the insurance sector at the EU level¹⁴⁰.

At the same time, the ability of insurance corporations to absorb the potential shocks remains good as their solvency capital ratios are still high (see Chart 4.4), and none of insurance corporations uses the exemptions

¹⁴⁰ <https://www.eiopa.europa.eu/document-library/financial-stability-report/financial-stability-report-december-2021>

set out in the Directive¹⁴¹ to improve their solvency capital ratio.

The risks are also somewhat alleviated by the use of reinsurance. In 2021, the share of non-life reinsurance premiums written accounted for 16.6%, while that of life reinsurance premiums – 1.6%¹⁴². Latvia has also the Fund for the Protection of the Insured in place (at the end of 2021, the value of the funds accumulated in the Fund amounted to 19.3 million euro, thus exceeding the previously specified minimum amount of funds for life insurance (5 million euro) and that for non-life insurance (11 million euro)¹⁴³. The accumulated funds serve as an additional buffer in case of insolvency of the insurance corporation to cover the part of remuneration that no longer can be covered by the insolvent insurance corporation itself.

To enhance the financial stability of the EU insurance corporations, **in 2021 the EC adopted a review package of Solvency II rules in the EU**¹⁴⁴ comprising a proposal for amendments to the Solvency II Directive¹⁴⁵ and a proposal for a new Insurance Recovery and Resolution Directive¹⁴⁶. The amendments to the Solvency II

Directive, inter alia, oblige insurance corporations to take the macroeconomic stability considerations into account when pursuing their investment policy, to reduce the dependence of the investment assessment on the cyclical and the short-term shocks, to improve the liquidity management and to specify the powers of the supervisory authority in the supervision of the liquidity risk.

At the same time, the Insurance Recovery and Resolution Directive would provide for the introduction of a minimum harmonisation across the EU and the establishment of clear recovery and resolution powers for supervisory and resolution authorities. The proposal to introduce a mandatory insurance guarantee scheme in all EU Member States has not received support from the Member States and is not included in the review package of Solvency II rules in the EU.

¹⁴¹ Exemptions cover, for example, the long-term guarantee assessment and the time premium of the long-term risk-free interest rate used to discount the technical reserves. In some countries, the impact of the Covid-19 pandemic on the solvency of insurers has been so pronounced that several insurers applied for new exemptions consequently granted by their supervisory authorities. Exemptions are used, for example, by Germany, Denmark, the Netherlands and Portugal.

¹⁴² The low proportion of reinsurance may be attributable to the fact that the risk to the return on investment is primarily undertaken by the insured rather than by the insurance corporation. An insurance corporation reinsures only the part of the (life) risk instead of the savings part.

¹⁴³ Section 288 of the Insurance and Reinsurance Law states that insurance payments are suspended if the accumulated amount of funds exceeds the minimum amount of funds. The amount threshold was last doubled in 2016 when the provisions of the Solvency II Directive were incorporated into the national legislation. See <https://likumi.lv/ta/en/en/id/274969-insurance-and-reinsurance-law>.

¹⁴⁴ https://ec.europa.eu/info/publications/210922-solvency-2-communication_en#documents

¹⁴⁵ Directive 2009/138/EC of the European Parliament and of the Council on the taking-up and pursuit of the business of Insurance and Reinsurance (Solvency II). <https://eur-lex.europa.eu/legal-content/LV/TXT/HTML/?uri=CELEX:32009L0138&from=EN>

¹⁴⁶ <https://eur-lex.europa.eu/legal-content/LV/TXT/HTML/?uri=CELEX:52021PC0582&from=EN>

APPENDIX 1. EXPOSURE OF LATVIAN COMPANIES TO PHYSICAL CLIMATE RISKS

- *A study on the impact of climate change physical risks on Latvian companies has been performed by combining data on climate projections, company financial data, as well as geospatial data of business units.*
- *Companies' future activities will be affected by more intense precipitation and risks caused by floods. However, the risks posed by heat in cities where business activity is concentrated should be particularly emphasized.*
- *Risk assessment requires the development of new tools for analysing data and forecasts, as well as an improved data availability.*

As awareness of the climate change impacts develops, Latvijas Banka also strives to become more involved in this field. The Financial Stability Reports of 2020 and 2021 analysed the exposure of the loan and investment portfolios to the transition risks of climate change. Following this work, **a pilot project has been completed. It analyses the impact of physical climate change risks¹⁴⁷ on Latvia's economy and the financial sector.** The pilot project also **includes the available data sources for the assessment of physical risks in Latvia and provides an insight into the linkage of data for further in-depth assessment of these risks, as well as provides recommendations for limiting the exposure to physical climate risks.**

Methodology

Data

The analysis is based on weather and flood forecasting data, financial data of companies, address details of company business units and the data of Latvijas Banka's Credit Register on loans to businesses.

For the purpose of projecting physical risks, a climate projection tool developed by the LEGMC, as well as flood maps were used. The climate projection tool provides detailed climate change projections and weather forecasts in the territory of Latvia according to a number of parameters using two different future scenarios (for the period of 2011–2100 which is divided into three 30-year periods), as well as information on historical observations on weather conditions (for the period of 1961–1990). The flood maps providing high granularity geospatial information about flooding sites in the territory of Latvia based on historical observations were employed.

The annual accounts of Latvian companies (2018–2020) were used as the source of financial data. The register of business units maintained by the State Revenue Service (SRS) was used for the geographical attribution of financial data; all Latvian business units active during the study were chosen from the register.

In addition to the calculation of the impact of flood risks, data from Latvijas Banka's Credit Register were used for selecting loans of the companies at the end of 2021 with at least one company's business unit located in a flooding area.

¹⁴⁷ The category of physical risks includes both acute (natural disasters) and chronic (long-term changes) risks. The assessment of physical risks is mainly based on climate change projections.

Other studies

The impact of climate change on the economy has been addressed in a number of studies, but mostly at general and aggregate level, since it is not only the various transmission channels and longer-term projections that make accurate calculations of the impact more difficult but also the wide range of future projections of unprecedented economic transformation, which has not been observed historically.

The study by Kotz et al (2021)¹⁴⁸ on the increase in precipitation intensity over a period of 40 years finds that the increase in the number of wet days and extreme daily precipitation have a negative impact on the economic growth rate, and this effect emerges very clearly for developed countries. This study complements a set of earlier studies that have identified an ambiguous impact of an increase in precipitation on the economy.

The impact of heat waves¹⁴⁹ on the economy has been thoroughly analysed specifically with respect to the cities included in the RAMSES project¹⁵⁰. One of project's studies¹⁵¹ estimates that the expected losses from the heat burden are considerable: in the more distant future, potential value added losses in a warmer year range between 0.4% (of gross value added in London) and 2.3% (of gross value added in Antwerp) to 9.5% (of gross value added in Bilbao). Also, a study by Deryugina et al. (2014) highlights a certain fall in productivity under conditions of higher temperatures – each degree above the average temperature reduces productivity by 1.7 percentage points¹⁵².

The study on the impact of floods on the value of real estate describes the impact both as a discount for real estate value in flooding areas, ranging from 5% to 20%¹⁵³ (it should be noted that there are significant differences across jurisdictions due to regulations) and by losses in the event of flooding. Losses depending on the flood depth have been thoroughly analysed in a study by the EC Joint Research Centre¹⁵⁴, indicating that the maximum losses resulting from flood damage per 1 m² in Europe are between 500 euro and 750 euro.

Several studies carried out in Latvia have examined the impact of climate change on specific sectors (e.g. the LEGMC¹⁵⁵ – on tourism), as well as vulnerability and adaptation strategies for different areas.¹⁵⁶

Selection of scenarios and data connection

The most relevant scenario period for carrying out the analysis had to be chosen among the available scenarios (2010–2040, 2041–2070, 2071–2100) of the LEGMC. The aim of the study is twofold: to identify the exposure of the Latvian economy to physical climate risks and to provide recommendations for limiting them. Therefore, the first time interval was not included, taking into account the fact that part of it had already passed, as well as the fact that returns on many investment decisions currently taken and the manifestations of operational risks will be evident in 2030 at the earliest. The last projection scenario was discarded because it is quite

¹⁴⁸ http://www.pik-potsdam.de/~anders/publications/kotz_levermann22.pdf.

¹⁴⁹ Here and below, heat waves refer to the period during which the air temperature increases, thus placing a burden on the human body (unlike the reference defining the temperature period above the historical average used by the LEGMC).

¹⁵⁰ <https://www.ramses-cities.eu/home/>.

¹⁵¹ <https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2016/07/Working-Paper-248-Costa-et-al.pdf>.

¹⁵² https://gspp.berkeley.edu/assets/uploads/research/pdf/Does_the_Environment_Still_Matter.pdf.

¹⁵³ Page 4 here: https://www.fig.net/resources/proceedings/fig_proceedings/fig2012/papers/ts06h/TS06H_kropp_5729.pdf

¹⁵⁴ https://publications.jrc.ec.europa.eu/repository/bitstream/JRC105688/global_flood_depth-damage_functions__10042017.pdf

¹⁵⁵ https://www4.meteo.lv/klimatariks/files/Klimats_turisms.pdf

¹⁵⁶ <https://www.varam.gov.lv/lv/petijumi-par-risku-un-ievainojamibas-novertesanu-un-pielagosanas-pasakumu-identificesanu>

distant from today's investment decisions and is more relevant for long-term national policy makers. Out of the two risk intensity scenarios (RCP 4.5 and RCP 8.5)¹⁵⁷, the most conservative RCP 8.5 scenario, which foresees more significant changes, was chosen.

This study further focuses on the effects of the increase in temperature and precipitation, without going further into two other main parameters included in the LEGMC forecasts – the average wind speed¹⁵⁸ and snow cover thickness¹⁵⁹. The increase in temperature is expressed by the number of tropical nights, as they are most directly related to the heat-induced burden on human productivity and health, but the precipitation intensity – by a maximum five-day precipitation amount.

The flood map established by the LEGMC, which is based on the observations made, demonstrates the likelihood of both inundation and wind-induced flooding (from the sea) every 10, 100 or 200 years. Preferring a more conservative approach, both types of floods were considered, with their likelihood to occur every 200 years. It should be noted that flood risks, due to climate change, tend to increase significantly compared to the historical observations¹⁶⁰. At the same time, the likelihood of inundation risks is not unequivocal¹⁶¹, as the factor of reduction of snow cover and the increase in precipitation have the opposite effect on the intensity of floods. On the other hand, the risk of wind-induced floods is likely to follow an upward path, as the frequency of extreme weather events and coastal erosion is growing, and sea levels are changing.

Data from different sources were combined using both ready-made data transformation tools and those developed specifically for this purpose. First, financial data of companies were attributed to the number of business units and their registration numbers allocated by the SRS. Then the addresses of the business units were converted into geographical coordinates (employing Google Maps¹⁶² and OSM API¹⁶³), which in turn, via the LGIA calculator of coordinates, were converted into LKS-92 coordinates used in the LEGMC climate projections. Thus, the financial data of companies can be attributed to climate projections at the company business unit address level.

Observations

The attribution of the risks of the increase in the number of tropical nights and precipitation intensity to companies was carried out using the **turnover of companies as a business volume indicator at the site concerned**. For example, consider the case of a retail company with a turnover of 1000 euro, who has single business unit in a region of Latvia where the historical number of tropical nights has on average been close to zero, but in the future six tropical nights per year have been projected. Then the analysis would show retail sector turnover of 1000 euro with the historical number of 0 tropical nights and same turnover in exposed to 6 tropical

¹⁵⁷ The scenarios used by the LEGMC are two future scenarios developed by the IPCC, where RCP 4.5 represents a scenario of medium emissions when they peak in 2040 and start declining, while RCP 8.5 is a scenario of higher emissions when the rise of emissions cannot be stopped. Figures 4.5 and 8.5 denote the growing radiation balance as a result of climate change (4.5 W/m² and 8.5 W/m²).

¹⁵⁸ Significant changes in the average wind speed are not projected over the projection horizon and therefore it was not chosen as a focus for the risk assessment.

¹⁵⁹ The snow cover thickness is expected to decrease significantly over the projection horizon. Although it is likely to have a significant impact on certain sectors (agriculture, tourism, road hauliers), it is concluded from the academic literature in this context that these changes do not have a significant overall and wide-ranging impact on the economy and therefore it has been decided not to go into further detail.

¹⁶⁰ "[...] the socio-economic impact of river floods in Europe is projected to increase by an average of 220% by the end of the century, due to climate change only." (<https://www.sciencedirect.com/science/article/pii/S0959378015300406>)

¹⁶¹ See Annex 6 of the document https://www.varam.gov.lv/sites/varam/files/data_content/buvnieciba_un_infrastruktura.pdf.

¹⁶² <https://developers.google.com/maps>.

¹⁶³ <https://wiki.openstreetmap.org/wiki/API>.

nights in forecast period. Given that the projections of these risks extend far into the future, it would not be appropriate to use loan data here, as the relevant investment decisions are and will be taken, unlike the decisions the adoption of which is affected by flood risks with a likelihood of occurrence each year.

Heat waves represent an important aspect of the physical climate risks to the future economy, especially in cities, as it is where the impact of heat waves and their burden are particularly pronounced due to the urban heat island effect.¹⁶⁴ In addition, economic activity is mainly concentrated in cities. The most important channel for influencing the economy is the decline in employee productivity and increase in costs. Applying the results of the RAMSES project on Antwerp to the economy of Riga, it can be observed that the impact on annual gross value added without adaptation measures would be a decline of 700 million euro. Alternatively, potential losses can be assessed according to the methodology employed by Deryugina et al. (2014): when calculating the decline in productivity on days with tropical nights (each hot day resulted in a 0.065% decline in annual productivity), the projected seven tropical nights in Riga would result in a 0.5% decrease in its revenue per year. This reference point takes into account only tropical nights, but not other relatively hot days, since those are not forecasted.

The comparison between the historical and projected numbers of tropical nights presented in Chart A1.1 shows their rapid increase, as well as the current turnover of the sectors in different locations outside Riga. The turnover calculated by business units relating to Riga and its immediate surroundings, is considered separately. The total annual turnover of Riga's companies exceeds 30 billion euro and is subject to the projected increase in the number of tropical nights from 0.2 to an average of 7 in the projection horizon. The largest number of tropical nights (reaching 10 in the projection horizon) is projected in Ventspils. Detailed data on the location of business units show the well-known concentration of economic activity in large cities, and climate forecasts and climate impact studies also indicate that **cities will be the most heat-affected zones.**

Chart A1.1
COMPANIES' TURNOVER BY SECTOR, DEPENDING ON THE HISTORICAL AND PROJECTED NUMBER OF TROPICAL NIGHTS

(excluding Riga; billions of euro)

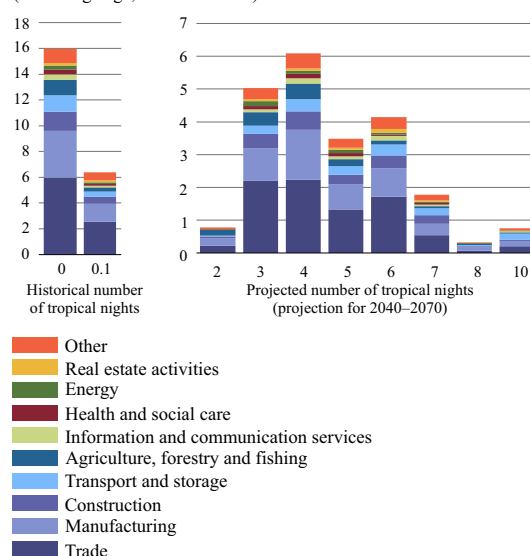
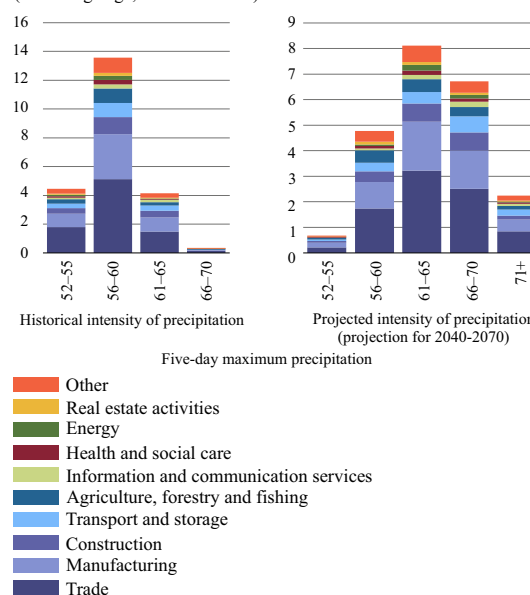


Chart A1.2
COMPANIES' TURNOVER BY SECTOR, DEPENDING ON THE HISTORICAL AND PROJECTED INTENSITY OF PRECIPITATION

(excluding Riga; billions of euro)



¹⁶⁴ Urban Heat Island (UHI) has many harm impacts to urban and human life, the examples are increased building and energy consumption, increased air pollutants emissions, compromised human comfort and health, and many more, <https://iopscience.iop.org/article/10.1088/1755-1315/152/1/012027/pdf>

The UHI effect is a phenomenon in which a significant difference in temperature can be observed between a city and its surrounding rural areas, or between different parts of a city. <https://www.sciencedirect.com/science/article/pii/S1876610214033992>

Similar to the heat effect, the increase in precipitation intensity was also analysed. Chart A.1.2 shows that in terms of companies' fixed assets **most sectors of Latvia's economy will experience the impact of intensive increase in the volume of precipitation** (comparing the five-day maximum amount of precipitation with historical data over the projection horizon, i.e. by 20%). Furthermore, it should be noted that river floods induced by precipitation (as opposed to spring inundation and wind-induced floods) are not dealt separately in the flood maps therefore the mentioned expected increase in rainfall intensity will also lead to an increase in the rainfall-induced flood risk which is not addressed in this analysis.

The observations of flood effects differ from the previous ones in terms of methodology used, as the flood maps have a high level of detail and, for each address, it is possible to determine whether the particular place is located in the flooding area. **In the flood risk assessment, data on the size of companies' fixed assets at the respective location are used** (see Chart A1.3 and A1.4). These data may reflect the amount of assets exposed to the risk and may also be a means of determining the proportion of the loan portfolio by showing the bank exposure to the risk. In this respect, spring flooding has a significant impact on a number of sectors, and one of the most important centres of economic activity directly exposed to spring flooding is Jelgava and its surroundings and consequently the sectors represented there. In turn, companies most exposed to the risk of wind-induced floods are located in Riga. **The transport and logistics sector is the most significant among them**, as a major part of its economic activity is related to the proximity of the river.

Chart A1.5 shows the proportion of loans exposed to flood risk by sector (loans at the end of 2021). Like before, when assessing the risk exposure of fixed assets, the sector of transport and logistics is more exposed to the flood risk also in terms of loans, followed by the real estate sector (which has a significant share in the total loan portfolio). With reference to these more affected sectors, it should be noted, of course, that each sector and even each company have their own capabilities and methods of adapting to and mitigating these flood risks. It is worth emphasising that lenders need to assess companies' plans and their ability to mitigate such risks when their fixed assets are located in a potentially flooding area.

Chart A1.3
IMPACT OF THE FLOOD RISK ON COMPANIES' FIXED ASSETS
(millions of euro)

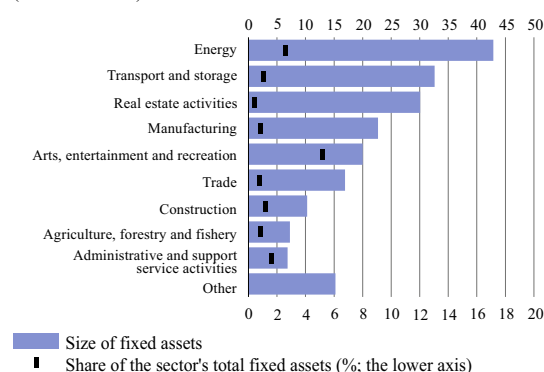


Chart A1.4
IMPACT OF WIND-INDUCED FLOOD RISK ON COMPANIES' FIXED ASSETS
(millions of euro)

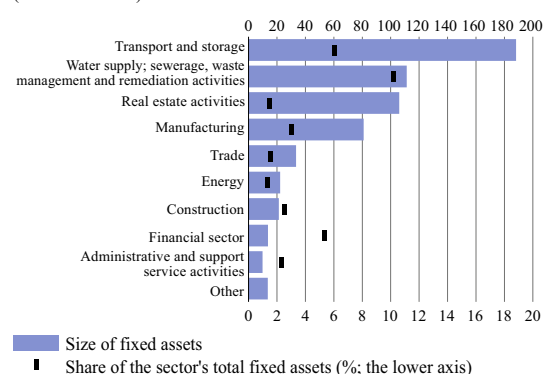
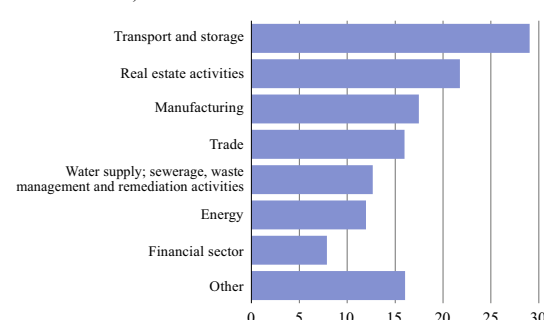


Chart A1.5
AMOUNTS OF LOANS ATTRIBUTED TO COMPANY LOCATIONS WITH FLOOD RISK
(proportionate to the companies' fixed assets at the respective location; millions of euro)



It should be stressed that, **although such long-term projected fluctuations do not cause acute financial**

risks to the financial sector in the form of shocks, **they pose chronic risks in the form of changes** where these effects should be noted when assessing even today's long-term investment business plans.

Conclusions

The most significant impact of the projected climate change effects is the temperature increase, in particular emphasized is the number of tropical nights. Their rising number compared to the historical average is very significant, and the negative effects of this upward path are concentrated in cities, particularly in Riga. These changes will threaten the quality of the working environment, causing direct and indirect losses to companies and increasing their financial vulnerability in the future.

However, these **risks can be significantly mitigated and managed through urban planning measures**, e.g. by using lighter heat reflecting paints for surfaces, by insulating buildings so that they do not accumulate heat and by creating green roofs. One of the most effective means is planting trees, since they not only improve the air quality and provide shadow, but also lower the temperature via evaporation. The introduction of such measures is a process that may ensure long-term sustainable development therefore they should already be taken into account in urban planning at this point in time.

Flood risks in Latvia are more concentrated in certain regions and sectors. When assessing future investment decisions regarding the construction of commercial and production buildings of companies, as well as the construction of household housing, it should be taken into account that the likelihood of flooding may increase in the future and, consequently, the property value may decrease, thus reducing the prosperity of the owner and the value of the lender's collateral.

It is important to evaluate floods in an accurate and focused way. Credit institutions should carefully assess these risks when making decisions on lending, as the use of overly approximate categories may have a negative impact on lending. For this purpose, we suggest to fully use the available data sources.

The analysis found that **the geospatial data of companies are not freely and easily accessible and usable to assess these risks, as well as they are not effectively compatible with the risk projections.** Meanwhile, flood maps are good sources, as different layers and a high degree of detail allow a resident or analyst to verify the risk of flooding at any address.

Recommendations

To urban municipalities (particularly those of the large cities): when drawing up an urban development plan and developing a sustainable environment, account should be taken of climate change projections and attention should be paid to future challenges, which will differ substantially from the risks observed in certain areas so far, especially in terms of floods and heat waves.

To credit institutions:

- when assessing physical risks, attention should also be paid to the long-term development policy of local governments (especially with regard to Riga), because the extent to which the exposure to physical risks is taken into account and limited accordingly, will affect the value of the borrower's assets (collateral) and income flow.
- when assessing flood risks, a detailed and conservative approach should be chosen: the available data allow modelling the risks of flooding for each property based on their addresses, but one should be aware that

these risks may grow in the future. An insufficiently detailed approach used when analysing, for example, the average risk of flooding in a region or area may lead to irrational lending constraints.

To credit institutions and public institutions: the usability, interoperability and analysis of the available data should be improved.

To public institutions: setting up of a climate data centre – a digital website bringing together the various available data sources and recommendations for their methodology should be considered.

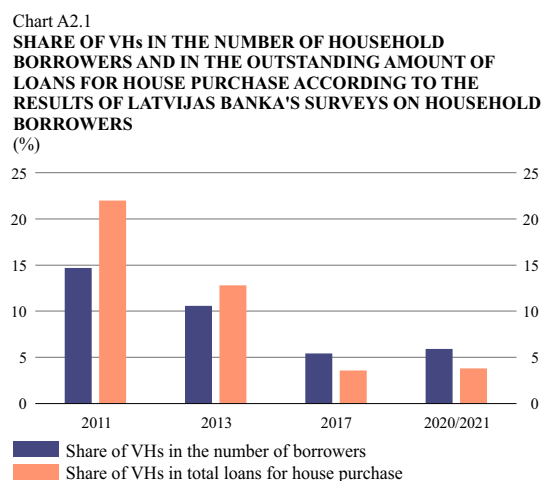
APPENDIX 2. RESILIENCE OF BORROWERS' SOLVENCY TO THE RISE IN PRICES, INTEREST RATES AND UNEMPLOYMENT: LATVIJAS BANKA'S SURVEY-BASED ASSESSMENT OF HOUSEHOLD BORROWERS

- *The Covid-19 pandemic has caused only a minor increase in the share of vulnerable households in comparison with the previous survey carried out in 2017. At the same time, the debt servicing burden of households has eased.*
- *Looking ahead, rising consumer prices will be the main driver of borrowers' vulnerability. The expected impact of the interest rate increase, in turn, is moderate as the fraction of loan payments in the household spending is low in comparison with other spending categories.*

From September 2020 to February 2021, **Latvijas Banka conducted the fourth survey of household borrowers¹⁶⁵**. To assess the borrowers' solvency in the cases of macroeconomic shocks, data on household income, expenses, savings and loan commitments were compiled and analysed. The analysis is based on the answers provided by 802 households with at least one loan for house purchase¹⁶⁶. Unless specified otherwise, the scope and source of the data used in all charts included in this Appendix is the survey of household borrowers.

Assessment of the surveyed household borrowers' financial vulnerability

Survey results¹⁶⁷ suggest that the pandemic has caused only a minor increase in the share of vulnerable households. According to this survey, 5.9% of the surveyed household borrowers can be considered vulnerable (hereinafter, "VH") and the loans granted to these VHs make up 3.8% of the total loans granted to the households surveyed (see Chart A2.1)¹⁶⁸. According to the previous survey carried out in 2017, the share of such households was slightly lower – 5.4%, but their share in total loans to households was 3.6%. The share of VHs was more than two times lower than in the wake of the financial crisis.



The adverse impact of the pandemic on the financial vulnerability of households has been cushioned by government support measures. It was also due to the heterogeneous impact of the pandemic that the

¹⁶⁵ The previous three Latvijas Banka's surveys of household borrowers were conducted in 2011, 2013 and 2017.

¹⁶⁶ Overall, 809 households were surveyed; however, 7 households were excluded from the analysis since their answers were not sufficient to determine their financial vulnerability.

¹⁶⁷ For the purposes of this Appendix, the survey results have been extrapolated to the whole group of household borrowers by using weighting calculated based on Latvijas Banka's Credit Register.

¹⁶⁸ According to the survey, a household is regarded as vulnerable if its balance of income and expenses is negative, i.e. the household's monthly expenditure for the purchase of food, consumer goods and services, utility payments and settlement of overall debt liabilities exceeds the total monthly disposable income. For a more detailed description of the methodology, see: Āriņš, M., Siņenko, N., Laube, L. Survey based assessment of household borrowers' financial vulnerability, Latvijas Banka, Discussion paper No. 1, 2014.

share of VHs increased only slightly: the pandemic mostly affected the lowest wage earners¹⁶⁹ who, for the most part, were not among those receiving loans from credit institutions; in contrast, a significant portion of the wealthier households even experienced a rise in income and savings.

The survey results indicate that **the share of employed borrowers with higher income significantly exceeds the country's average.** The net income of 82.4% of the employed of the households surveyed was higher than 700 euro per person employed; however, the share of such households was only 41.2% in the whole economy in 2020 (see Chart A2.2). **39% of the households surveyed even saw an increase in income during the first year of the pandemic; in contrast, 23% experienced a decrease**¹⁷⁰.

Possibility to work remotely during the pandemic has boosted the demand for larger properties, including private houses¹⁷¹. A larger number of households have also undertaken higher loan commitments to purchase more spacious properties¹⁷². The survey results suggest that it is **the most well-off households that have undertaken the highest commitments.** In 2020, mainly households with total net income exceeding 2000 euro per month experienced an uptrend in the average amount of loans for house purchase (see Chart A2.3). Similar to the general tendency in the economy, **income of a large majority of the most well-off borrowers also grew during the pandemic.** According to the survey results, 45% of these households witnessed an income increase and only 17% – a decrease; moreover, the fall in income was largely a minor one (see Chart A2.4).

¹⁶⁹ For the effects of the pandemic on its most affected households, see <https://www.makroekonomika.lv/cik-liela-mera-covid-19-krize-ietekmejsi-tas-viskrasak-skarto-majsaimniecibu-maksatspeju>.

¹⁷⁰ For more information on the heterogenous effect of the pandemic on the borrowers' income, see Box 1.2 of the Financial Stability Report 2021.

¹⁷¹ Open data of real estate transactions show that the average space of housing sold grew by 2.4% in 2020. This is the strongest rise observed since 2012. Until 2020, the space of housing sold even decreased somewhat over a few years, but it remained broadly unchanged in other years.

¹⁷² In accordance with Latvijas Banka's Credit Register data on new loans for house purchase, the outstanding amount of relatively large (more than 100 000 euro) loans has grown most since the second half of 2020.

Chart A2.2
DISTRIBUTION OF THE EMPLOYED IN THE COUNTRY AND HOUSEHOLD BORROWERS SURVEYED BY LATVIJAS BANKA BY NET MONTHLY INCOME PER PERSON EMPLOYED AT THE END OF THE RESPECTIVE YEAR (%)

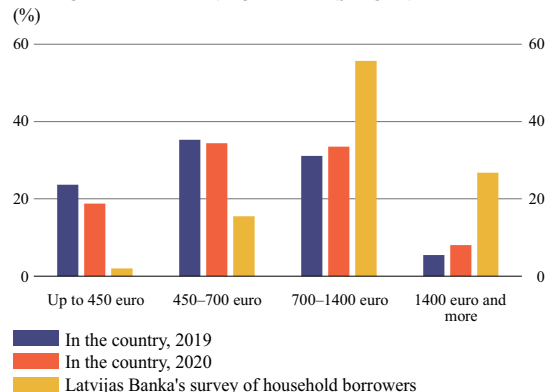


Chart A2.3
AVERAGE AMOUNT OF LOANS FOR HOUSE PURCHASE ISSUED TO THE HOUSEHOLDS SURVEYED BY LATVIJAS BANKA IN 2019 AND 2020 BY THEIR TOTAL NET MONTHLY INCOME (thousands of euro)

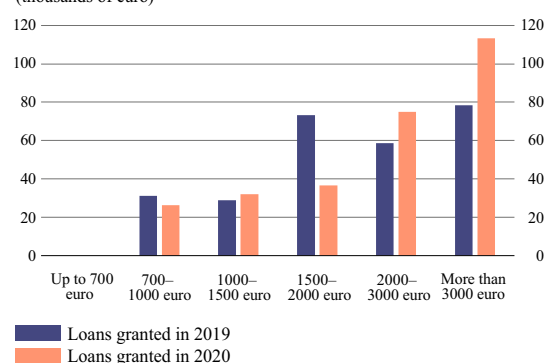
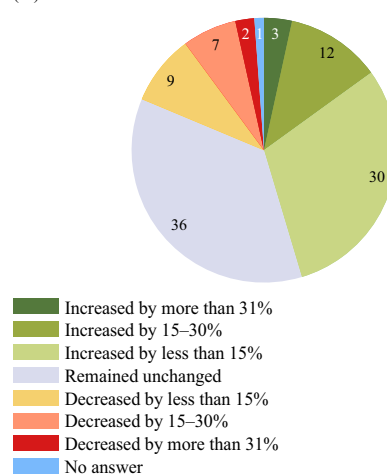


Chart A2.4
ANSWERS PROVIDED BY THE HOUSEHOLDS WITH THE TOTAL NET INCOME EXCEEDING 2000 EURO PER MONTH TO THE QUESTION: "WHAT ARE THE YEAR-ON-YEAR CHANGES TO THE TOTAL INCOME IN YOUR HOUSEHOLD?" (%)



Since the largest commitments have mainly been undertaken by the most well-off households with growing income, the share of households with high or excessive debt burden has decreased. Households with the debt-service-to-income ratio exceeding 30% comprised 16.4% of the total household borrowers surveyed. For comparison, the share of such households was 19.5% in the survey of 2017 (see Chart A2.5). There were no households in the survey whose debt would exceed their total annual net income by more than six times (see Chart A2.6). According to the survey of 2017, the share of such households was 3.3%.

What are the projections of borrowers' vulnerability in 2022 based on the survey data?

Using the survey data on the financial position of household borrowers in 2020–2021, as well as taking account of the economic development in 2021 and its forecasts for 2022, the potential change in household borrowers' vulnerability arising from various isolated shocks has been modelled.

Chart A2.5
DISTRIBUTION OF HOUSEHOLDS SURVEYED BY LATVIJAS BANKA BY DEBT-SERVICE-TO-INCOME RATIO (%)

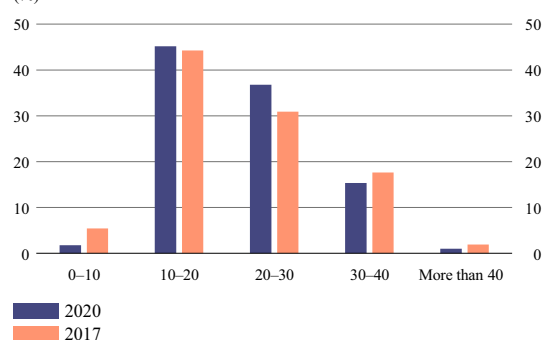
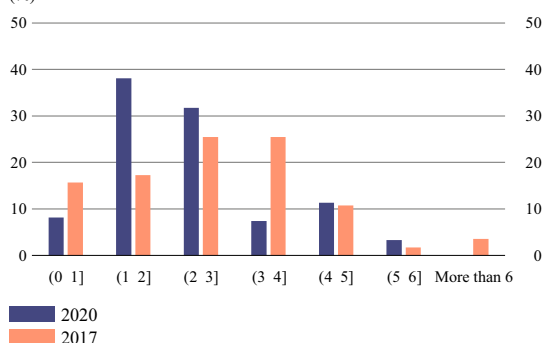


Chart A2.6
DISTRIBUTION OF HOUSEHOLDS SURVEYED BY LATVIJAS BANKA BY DEBT-TO-INCOME RATIO (%)



The baseline scenario for 2022 has been drawn up based on the following assumptions:

- The expenses and income reported by the surveyed borrowers in 2020 have been increased in accordance with the average rate of change of expenses and income in the economy during 2021. Forecasted growth rates are applied to household expenses and income to obtain their projection for 2022.
- The part of household income not generated from employment remains unchanged or is adjusted by changes in pensions and state benefits introduced in 2022 (for instance, the changes in the procedure for granting the family state benefit, as well as government benefits intended for compensation of higher energy prices were added to the income of households with pensioners and/or children¹⁷³).
- Household savings remain unchanged and can be used to cover expenses in 2022.
- The principle of static balance has been applied to borrowing by households, i.e. it is assumed that their loans and loan maturity dates remain the same at the beginning of 2022 and at the moment of the survey. Based on these aspects, the payments needed for covering the loan principal and interest payments in 2022 have been calculated.
- In order to take into account the potential rise in interest rates, the interest rates on housing loans were already increased by 100 basis points in the baseline scenario¹⁷⁴.

Following the application of the above baseline scenario, the share of VHs in the households surveyed rose to 11.4% but the share of loans granted to them in the total loans for house purchase – to 7.4%. It should be noted that the vulnerability of borrowers is reduced by the fact that household disposable income has seen

¹⁷³ 200 euro (the total of government support released in instalments of 50 euro per month from January to April 2022) per child for households with children, as well as 80 euro per pensioner in the household (the total of government support released in instalments of 20 euro per month from January to April 2022).

¹⁷⁴ According to SIA EUREX data on 3-month EURIBOR futures in late 2022.

an increase within this survey compared with that of 2017, possibly owing, in part, to the pandemic.

Of course, households can adjust and restructure their spending, thus cushioning their vulnerability risk. To identify the VHs where spending adjustment might be very burdensome, every VH balance was recalculated, equating its spending to the country's average household spending on all goods and services, except food service outside the house, as well as cultural and recreational services. If the VH balance is negative even after the recalculation, the possibilities of households to cut their expenses are deemed very burdensome. The share of such VHs constituted 8.3%, while the share of their loans in the total loans for house purchase – 5.0% (see Chart A2.7). Further analysis assumes that households do not change the structure of their expenditure.

Using the above baseline scenario as a starting point, the sensitivity of borrowers to the shocks induced by rising interest rates, consumer prices or unemployment was analysed¹⁷⁵.

In accordance with the results of the analysis, **the interest rate increase shock has a moderate effect on borrowers' vulnerability** (see Chart A2.8) as interest payments constitute a relatively small share of the surveyed households' spending (on average 6%). The rise in interest rates by additional 200 basis points¹⁷⁶ would increase the share of VHs to 14.9% and their share in loans for house purchase – to 12.1%. This would entail a significant increase in NPLs for credit institutions; nevertheless, such an isolated rise in interest rates (i.e. assuming that other variables remain constant) would not diminish credit institutions' interest income, since growth in NPLs would be outweighed by higher income owing to the pickup in interest payments made by other borrowers.

Meanwhile, **more swiftly growing consumer prices would notably affect borrowers' solvency** (see Chart A2.9). The price increase is a major factor affecting household expenses, thus the rise in consumer and service prices has a more immediate effect on household solvency compared with the increase in interest rates. For example, if the rise in consumer prices affecting household spending exceeded the forecasts under

Chart A2.7
CURRENT AND EXPECTED SHARE OF VHs (%)

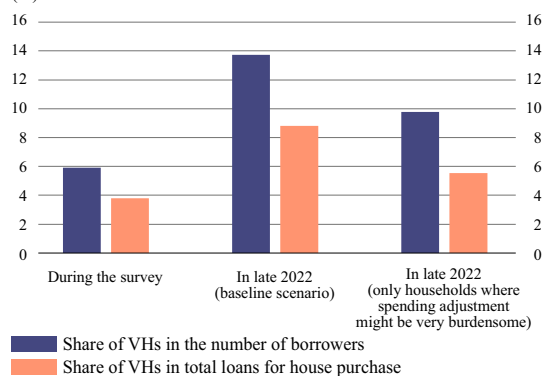


Chart A2.8
HOUSEHOLD SENSITIVITY TO AN INCREASE IN INTEREST RATES (%)

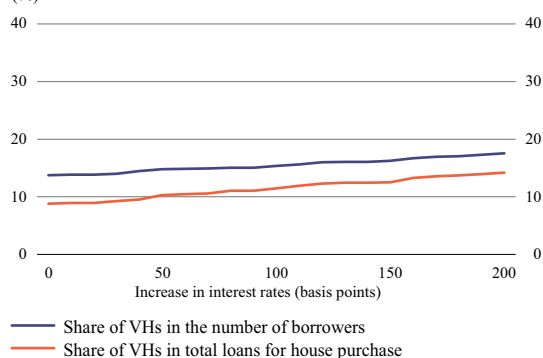
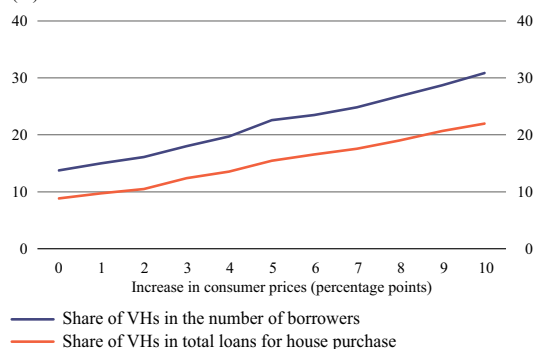


Chart A2.9
HOUSEHOLD SENSITIVITY TO AN INCREASE IN CONSUMER PRICES (%)



¹⁷⁵ For the description of the methodology employed in the analysis, see: Āriņš, M., Siņenko, N., Laube, L. Survey based assessment of household borrowers' financial vulnerability, Latvijas Banka, Discussion paper No. 1, 2014.

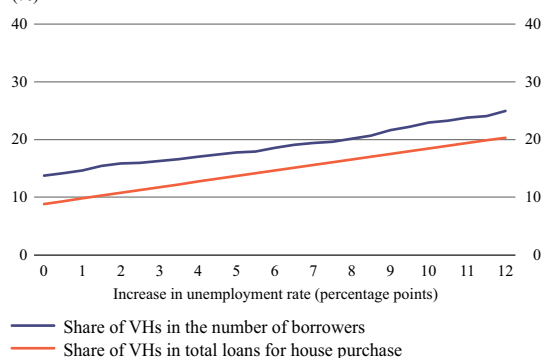
¹⁷⁶ The rise in interest rates by 200 basis points entails that, for instance, an interest rate previously standing at 2.5% would reach 4.5%.

the baseline scenario by 15 percentage points, more than one quarter of households would be regarded as VHs and their share in loans for house purchase would amount to 18.5%.

The effect of the unemployment rise shock would be more moderate (see Chart A2.10). However, this is partly because of an assumption that all employed persons, who become unemployed, receive unemployment benefits for eight months¹⁷⁷. The actual impact would, most likely, be stronger as the employed, whose employers have not fully paid the compulsory state social insurance contributions from their employment income, would not receive unemployment benefits in full, and thus their income would decrease faster. The availability of unemployment benefits is also reduced by pandemic-related employment breaks¹⁷⁸.

Overall, **the borrowers' financial situation has experienced only a minor deterioration** in comparison with the previous survey of household borrowers, and the pandemic-related impact has not been excessive. However, **the expected price rise coupled with the interest rate increase can result in a significant adverse effect on borrowers' solvency**.

Chart A2.10
HOUSEHOLD SENSITIVITY TO AN INCREASE IN UNEMPLOYMENT RATE
(%)



¹⁷⁷ The potential unemployment benefit is calculated individually for each employed person, who can become unemployed, based on the wage and length of service of the employed person (<https://www.vsaa.gov.lv/lv/plasaks-apraksts-bezdarbnieka-pabalsts>).

¹⁷⁸ A socially insured person, for whom social insurance contributions have been paid or had to be paid for at least 12 months during the 16-month period before the day when the status of an unemployed person was granted, is entitled to an unemployment benefit. Accordingly, employment breaks, except furloughs, may hinder eligibility for the unemployment benefit.

APPENDIX 3. THE GEOPOLITICAL SITUATION AGGRAVATES THE CYBER SECURITY RISK

Cyber security risks have followed an upward path along with the outbreak of the war in Ukraine. Latvia has not experienced critical cyber incidents so far. CERT.LV reports¹⁷⁹ that heightened activity of cyber attackers was also observed in Latvia in March 2022. It mainly took the form of large-scale phishing campaigns against employees of public and local government authorities, as well as those of state capital companies, and involved looking for vulnerabilities of the public sector infrastructure. Indeed, the upswing in activity can be partially associated with the increased scrutiny regarding cyber security issues that resulted in more frequent reporting on the noticed attacks and phishing or attempted fraud.

However, concerns remain in relation to the increasing intensity of cyber attacks¹⁸⁰, particularly in the countries having imposed sanctions on Russia. For the time being, it is mainly Ukraine that has experienced cyber attacks and system interference (after the outbreak of the war)¹⁸¹, although they were less destructive by nature than initially foreseen.

Global escalation of the cyber security risk is also highlighted by the IMF¹⁸², warning about the potential effects from cyber incidents on the financial stability worldwide and urging countries to ensure effective regulation and monitoring of cyber security, as well as to enhance cyber security resilience of financial institutions and their ability to resume the provision of services after incidents.

The ESRB encourages to improve cooperation

To enhance resilience of EU countries to systemic cyber security incidents, the ESRB issued a **recommendation on a pan-European systemic cyber incident coordination framework** for relevant authorities (ESRB/2021/17) **at the end of 2021**¹⁸³. The recommendation aims at establishing a cross-border information exchange and action coordination framework between European supervisory authorities (EBA, ESMA and EIOPA), the ECB, ESRB and microprudential and macroprudential institutions of member states by designating points of contact in every institution. Such a coordination framework is vital for ensuring communication and coordinated response in the event of cyber incidents affecting the financial sector at systemic and cross-border levels, since financial institutions often operate across jurisdictions of several member states, as well as use outsourcing provided by institutions located in other countries. The coordination framework would make information exchange on recent developments in the field of cyber security and best practices concerning the mitigation of vulnerabilities more operational, as well as would strengthen competence of supervisory authorities in the area of cyber security.

In terms of content, the above **ESRB recommendation is linked with the future Regulation of the European Parliament and of the Council on digital operational resilience for the financial sector**¹⁸⁴ (hereinafter,

¹⁷⁹ 21 March 2022. [CERT.LV Pārskats par Latvijas kibertelpā notiekošo politiskā saspīlējuma apstākļos](#) (Overview of the developments in the cyber space of Latvia against the backdrop of political tensions).

¹⁸⁰ BBC: ["Biden: Russia 'exploring' US cyber-attacks"](#), 22.03.2022.

¹⁸¹ Financial Times: ["Inside Ukraine's online defence: the battle against Moscow's cyber attacks"](#), 24.03.2022.

¹⁸² [IMF Global Financial Stability Report, April 2022.](#)

¹⁸³ [Recommendation of the European Systemic Risk Board of 2 December 2021 on a pan-European systemic cyber incident coordination framework for relevant authorities \(ESRB/2021/17\).](#)

¹⁸⁴ [Proposal for a Regulation of the European Parliament and of the European Council on digital operational resilience for the financial sector.](#)

DORA), which intends to enhance the role of European supervisory authorities in reducing cyber security vulnerabilities of the financial sector. Therefore, the implementation deadlines of the recommendation have been linked to the date of entry into force of DORA¹⁸⁵. However, the ESRB is already working on designating points of contact and on initial information exchange.

The spotlight of macroprudential policy also falls on cyber security

So far, the cyber security risk has not been included within the competence of macroprudential authorities. However, the realisation that cyber incidents can also cause a systemic impact on financial institutions and affect financial stability of countries and even country groups¹⁸⁶ **has made macroprudential authorities put greater focus on the cyber security risk**, including considerations in respect of how macroprudential authorities might facilitate the financial system's resilience to the effects of cyber incidents and what possible instruments might be used.

Taking account of the growing role the new global risks, including climate and cyber risks, play in the regular revision of the **EU macroprudential framework, the EC launched a consultation¹⁸⁷ that also included the issue of the changes needed in the macroprudential framework at EU level to mitigate cyber risks of systemic level to financial stability more efficiently in the future**. During the consultation, the ESRB, ECB and EBA, as well as several countries and private financial institutions, presented proposals¹⁸⁸ on the possible role of macroprudential authorities in reducing the cyber security risk.

The ESRB proposals include an offer to extend the mandate of macroprudential authorities, e.g. to include the mandate with regard to IT outsourcing service providers (similar to what has been stipulated concerning bank supervisors in the draft DORA), provide for the possibility to set higher cyber resilience requirements for systemically important credit institutions, the possibility to establish concentration restrictions in relation to outsourcing service providers to avoid situations where all systemically important institutions use the same outsourcing service providers, and conduct systemic cyber resilience stress tests. Although this does not necessarily mean that all the above proposals will be incorporated in the next versions of EU banking legislation, this is a necessary step towards the development of macroprudential authorities' capability to respond to rising cyber security risks.

Strengthening the financial sector's critical service framework helps to reduce systemic cyber security risks

In July 2021, FCMC regulatory provisions for ensuring the critical financial sector services entered into force¹⁸⁹. They also include requirements for credit institutions to enhance their resilience against cyber incidents. The regulatory provisions not only provide for the volume of critical services but also define uniform requirements for continuity plans of these services, complementing the plans with measures to secure resources (IT systems, buildings, staff, outsourcing) for the provision of the critical services in a state of emergency, including dry running the continuity plans. The above provisions apply to the major credit institutions (the number of opened customer accounts with such a credit institution and household

¹⁸⁵ Currently, DORA is still under development. The timeframe for the implementation of the ESRB recommendation is from six to 36 months following DORA's entry into force.

¹⁸⁶ See. ESRB report of February 2020 "[Systemic cyber risk](#)".

¹⁸⁷ [Targeted consultation on improving the EU's macroprudential framework for the banking sector](#).

¹⁸⁸ ESRB Concept Note [Review of the EU Macroprudential Framework for the Banking Sector](#), March 2022.

¹⁸⁹ FCMC regulatory provisions No. 64 "Regulatory Provisions for the Management of Critical Services of the Financial Sector" of 8 June 2021.

deposits therein constitute at least 5% of the total number of payment accounts in the credit institution sector and 5% of the total domestic household deposits in the credit institution sector) which provide services to the largest part of society.

What can be done to reduce cyber security risks? Learn and get ready!

With cyber security vigilance increasing worldwide, Latvia also needs to develop public knowledge and raise its awareness of cyber security, i.e. how to protect one's devices and IT systems, how to recognise the most common types of attacks and fraud, what to do in the event of a potential cyber incident. The relevant information is available on Latvijas Banka's site [Financial literacy](#)¹⁹⁰. Also, CERT.LV, responding to the exacerbation of the geopolitical situation, has published recommendations to minimise the risks from cyber threats¹⁹¹. The medium-sized and large enterprises and institutions, whose operation involves increased IT security, should consider their joining the CERT.LV Security Expert Group¹⁹², which is composed of experts responsible for IT security and business continuity and who represent various organisations. These experts share information on cyber security threats and best practices concerning the reduction of cyber security risks. Meanwhile, for the purpose of day-to-day security, people should keep some cash at hand for basic needs in the short term to avoid mundane concerns caused by potential disruptions to the operation of electronic payment and transaction services.

¹⁹⁰ For example: "[Activity of social network scammers is increasing: the most popular schemes](#)" (available in Latvian only).

¹⁹¹ See [CERT.LV recommendations for action in circumstances of the exacerbation of the geopolitical situation in Europe and of increasing cyber threats](#) (available in Latvian only).

¹⁹² See CERT.LV [Security Expert Group](#) (available in Latvian only).

APPENDIX 4. CRYPTO-ASSET INVESTMENT TRENDS IN LATVIA

- *The flow of investment by Latvia's population in crypto-assets is small yet progressing. Investment is largely affected by the bitcoin price dynamics. Accounts opened with Lithuanian and Maltese payment institutions dominate in payments made to crypto wallet maintainers.*
- *Since the outbreak of the war in Ukraine, the investment flow has declined.*
- *In the absence of investor protection and a supervisory mechanism for crypto-assets and their managers, risks attributed to investment in crypto-assets remain high.*

Since 2020, the global crypto-asset market has evolved very rapidly, i.e. the capitalisation of crypto-assets has surged significantly (it grew more than 15 times from early 2020 to November 2021, amounting to 2.6 trillion euro¹⁹³). More and more private and also institutional investors are engaging in crypto-asset management; furthermore, the ecosystem of decentralised finance is also evolving.

Crypto-assets include not only so-called cryptocurrencies or virtual currencies (e.g., bitcoin, ether, ripple)¹⁹⁴, but also utility tokens (used to ensure digital access to services), as well as asset-referenced tokens, including stablecoins^{195, 196}.

Even though the evolution of crypto-assets offers new possibilities for a smoother performance of the financial system, it is also simultaneously related to significant risks to investors, financial players and financial stability in a broader context. The European supervisory authorities (EBA, ESMA and EIOPA) have warned against the risks related to investment in crypto-assets, including risks to investors of losing all the money invested¹⁹⁷. Meanwhile, Chainalysis, the blockchain data analytics platform, concludes in its 2022 Crypto Crime Report¹⁹⁸ that the use of crypto-assets in criminal offences (mostly fraud) followed an upward path, reaching approximately 14 billion US dollars in 2021. The investors of crypto-assets face a risk of becoming victims of fraud, as well as a risk of indirectly participating in money laundering. Nevertheless, the capacity of law enforcement authorities to find the stolen assets and return them to the owner is also increasing, at least in developed countries, albeit at a subdued rate. Of course, significant resources, training and new skills are necessary for a successful fight against cybercriminals.

The adaptation of crypto-assets within the financial system can pose risks to the stability of the financial system in relation to the highly volatile value of crypto-assets, the non-resilience of financial institutions to cyberrisks and the potential confidence shock caused by these cyberrisks to the wider financial system during the periods of market turbulence. The traditional financial system increasingly adapts crypto-assets in its daily business by both directly investing in them and by offering financial instruments related to investment in crypto-assets (e.g. investment in shares of crypto-asset companies and funds with holdings of crypto-assets). The use of so-called sponsor institutions for implementing the stablecoin stability mechanism also increases risks to the financial system, provided that the sponsor institution has to secure both the liquidity of the supervised market funds and of the stablecoins within the unsupervised market during the periods of market turbulence.

¹⁹³ <https://coinmarketcap.com/charts/>.

¹⁹⁴ [Crypto Assets and Cryptocurrency / New Brunswick Financial and Consumer Services Commission \(FCNB\)](#).

¹⁹⁵ MiCA Directive introduces an "electronic money token" whose value is stabilised by referring to just one fiat currency.

¹⁹⁶ <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020PC0593&from=EN>.

¹⁹⁷ <https://www.fktk.lv/klientu-aizsardziba/es-finansu-regulatori-bridina-pateretajus-par-kriptoaktivu-riskiem/>.

¹⁹⁸ <https://go.chainalysis.com/2022-Crypto-Crime-Report.html>.

The number of people purchasing crypto-assets is growing in Latvia; however, generally the investment by Latvia's population in crypto-assets is regarded as modest. According to the results of surveys conducted by Latvijas Banka and SIA Latvijas Fakti, in 2022 (to date) **8.0% of the population has bought crypto-assets in Latvia** (4% in 2021)¹⁹⁹. At the same time, the number of people who have never heard about crypto-assets is on a downward trend, i.e. 39% in 2018 and only 11% in 2022.

Latvijas Banka's "Regulation for Compiling the Payment Statistics Reports on Card-Based Payment Transactions" entered into force in August 2021; it establishes that when card-based payment transactions executed with payment cards issued by credit institutions exceed 5% of the total number of card-based payment transactions in the country, these credit institutions have to provide detailed weekly data on card-based payment transactions. Such data are available for the period since the beginning of 2020 and, inter alia, allow to quantify the investment in crypto-assets made with payment cards issued in Latvia (payments to crypto-asset wallet maintainers²⁰⁰). The results of the analysis of this investment are aggregated and published in a more detailed research article on the use of crypto-assets in Latvia²⁰¹.

In 2021, the payments of Latvia's population²⁰² to crypto-asset wallet maintainers amounted to 55.6 million euro (13.3 million euro during the first quarter of 2022). The amount approximately equalled that of card payments for gambling, but was significantly lower than that of card payments to cover basic needs (see Chart A4.1). Payments in crypto-assets constituted the 19th largest group of card payments (0.45% of total card payments during the first quarter of 2022)²⁰³.

Data on **payments to top up crypto-asset wallets show an exponential growth until May 2021** (the payments amounted to 7 million euro in this month). This growth trend is in line with the increase in crypto-asset market capitalisation in the world.

Small-scale payments dominate. 40% and 98% of the payments made do not exceed 60 euro and 1000 euro respectively (see Chart A4.2). This suggests that **Latvia's population takes caution when investing in**

Chart A4.1
PAYMENTS FOR GAMBLING AND TOPPING UP CRYPTO WALLETS MADE WITH PAYMENT CARDS ISSUED BY LATVIAN CREDIT INSTITUTIONS
(monthly amount; millions of euro)

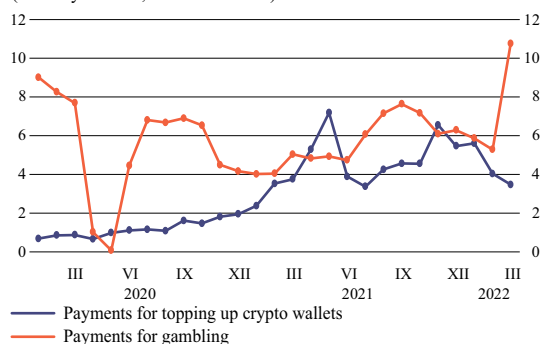
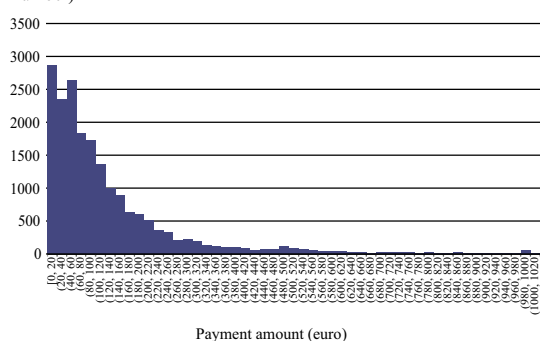


Chart A4.2
DISTRIBUTION OF THE AMOUNT OF PAYMENTS MADE WITH PAYMENT CARDS ISSUED BY LATVIAN CREDIT INSTITUTIONS TO TOP UP CRYPTO WALLETS
(extreme values excluded; January 2021–March 2022; period average; number)



¹⁹⁹ The results of the ECB's survey suggest that this number is as high as 10% in the six largest euro area countries. [For a few cryptos more: the Wild West of crypto finance \(europa.eu\)](https://www.ecb.europa.eu/press/pr/2022/pr220301/crypto_en.html).

²⁰⁰ Merchant code 6051 includes payments in foreign currency made by non-financial institutions, money transfers and travellers' checks. MasterCard and Visa have specified that this code should also include crypto-assets and payments to crypto-asset wallet maintainers. It is assumed that payments classified under code 6051 can be recognised as payments to top up crypto-asset wallets.

²⁰¹ <https://www.macro-economics.lv/global-expansion-crypto-assets-supervision-gaining-momentum>, <https://www.macro-economics.lv/crypto-assets-latvia-first-steps-evaluation>.

²⁰² The available data do not make it possible to distinguish between payments made by individuals and those made by companies, but these types of payments to maintainers of crypto-asset wallets are mostly payments specific to individuals.

²⁰³ Calculated using payment card data.

crypto-assets and spends small amounts for this purpose.

Payments are mostly made to payment accounts opened by crypto-asset companies in European countries (Lithuania, Malta, Ireland) where the ecosystem of new financial technologies FinTech (including crypto technologies) is developing buoyantly (see Chart A4.3).

Payments to Lithuania surged in 2021 due to the fact that Lithuanian payment institutions served non-financial corporations providing crypto wallet services. Meanwhile, payments to the United Kingdom dropped significantly, as in June 2021 the activities of Binance, one of the world's largest crypto exchanges, were ceased and customer service was moved to other jurisdictions; thus many crypto-asset companies suspended the ongoing licensing process in the United Kingdom²⁰⁴. Part of the payment flows were taken over by Estonian and Irish payment institutions (their share in total payments grew the fastest). Since the outbreak of the war in Ukraine the amount of payments to Russian-based payment accounts has dropped substantially (by 67.4% in March 2022 compared to January).

Investment by Latvia's population in crypto-assets correlates with the bitcoin price dynamics (see Chart P4.4). The overall global trend also shows that crypto-asset markets are particularly characterised by herding behaviour²⁰⁵. Interestingly, the warnings disseminated by various supervisory authorities against risks related to the investment by individuals in crypto-assets have little effect on this trend. A well-balanced investment portfolio and moderation underlies a high level of financial literacy which, in turn, contributes to a sustainable overall development of Latvia's society. Therefore, Latvijas Banka and the FCMC have identified the improvement of financial literacy as one of their priority tasks²⁰⁶.

Chart A4.3
PAYMENTS MADE WITH PAYMENT CARDS ISSUED BY LATVIAN CREDIT INSTITUTIONS BY COUNTRY OF THE CRYPTO WALLET MAINTAINER'S ACCOUNT
(January 2020–March 2022; amount; millions of euro)

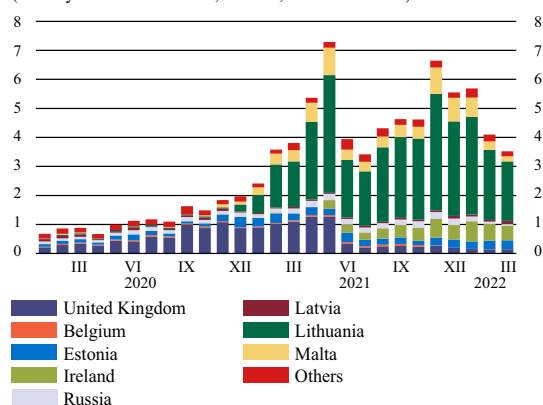
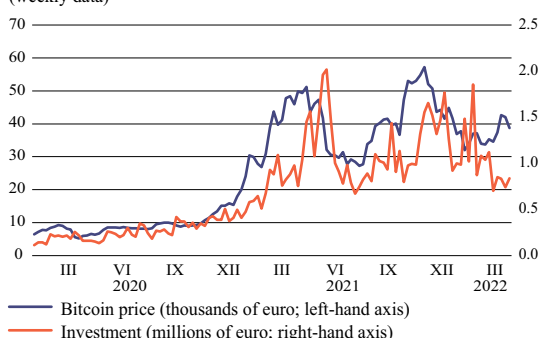


Chart A4.4
RELATIONSHIP BETWEEN THE INVESTMENT BY LATVIA'S POPULATION IN CRYPTO-ASSETS AND THE BITCOIN PRICE DYNAMICS
(weekly data)



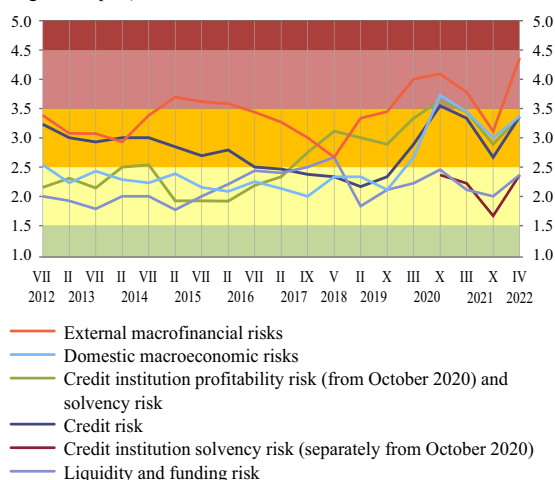
²⁰⁴ <https://www.reuters.com/technology/bitcoin-shrugs-off-uk-crackdown-major-crypto-exchange-binance-2021-06-28/>.

²⁰⁵ Bouri E., Gupta R., Roubaud D., 2019. Herding Behaviour in Cryptocurrencies. Available at: https://repository.up.ac.za/bitstream/handle/2263/71279/Bouri_Herding_2019.pdf?sequence=1.

²⁰⁶ <https://www.fktk.lv/en/news/important/national-strategy-for-financial-literacy-in-latvia-2021-2027-has-been-developed/>.

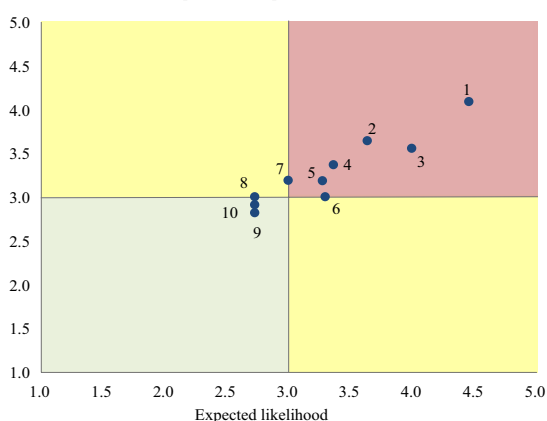
APPENDIX 5. RESULTS OF THE CREDIT INSTITUTION SURVEY ON RISKS

Chart A5.1
ASSESSMENT OF THE KEY RISK CATEGORIES BY CREDIT INSTITUTIONS* IN TERMS OF RISK LEVEL
(taking account of the expected likelihood of a risk and the potential negative impact)



* In April 2022, Latvijas Banka conducted a credit institution survey aimed at finding out their assessment of risks to Latvia's financial system. The survey respondents were Swedbank AS, AS SEB banka, Luminor Bank AS Latvija filiāle, AS Citadele banka, BluOr Bank AS, AS Expobank, AS BIB Alternative Investment Management, AS Reģionālā investīciju banka, AS LPB Bank, the Latvian Branch of OP Corporate Bank plc and Signet Bank AS.

Chart A5.2
ASSESSMENT OF THE KEY RISK FACTORS PROVIDED BY CREDIT INSTITUTIONS IN APRIL 2022
(in a scale from 1 to 5; potential impact)



Risk factors

1. The impact of a considerable deterioration of the external macrofinancial environment on the economy of Latvia.
2. Deterioration of NFC solvency.
3. Deterioration of household solvency.
4. Deterioration of Latvia's economic situation due to domestic factors.
5. Cyber security risk to Latvia's financial system (it is recommended to be filled in by IT specialists).
6. Effect of climate change physical and transitional risks on Latvia's financial system (unlike other risks, it would be preferable to assess this risk over a medium term (5 to 7 years) horizon).
7. Rapid changes in housing real estate prices.
8. Reputation risk and other risks related to developments in AML/CFT situation in Latvia and Nordic countries.
9. A significant fall in demand in commercial real estate market.
10. Rising risks in parent banks of major Latvian credit institutions or in their home countries (including rising macro-financial risks in their economies or increase in funding risks in the parent banks).

APPENDIX 6 PERFORMANCE INDICATORS OF CREDIT INSTITUTIONS

Table A6. Overall performance indicators of credit institutions

Indicator	2016	2017	2018	2019	2020	2021	March 2022
Balance sheet items							
Number of credit institutions and subsidiaries of foreign credit institutions	23	21	20	19	16	16	16
Total assets (millions of euro)	29 496.1	28 387.7	22 870.5	23 202.9	24 558.1	25 447.2	25 796.5
Share of loans in total assets (%)	51.3	50.9	59.3	58.1	52.7	56.7	56.1
Annual growth rate of domestic loans (%)	3.1	-2.8	-4.1	-1.5	-3.3	11.8	3.7
Share of deposits in total liabilities (%)	72.4	71.4	71.4	74.2	76.0	78.6	77.7
Annual growth rate of domestic deposits (%)	12.6	0.0	6.6	7.3	8.4	10.3	5.9
Share of liabilities to MFIs in total liabilities (%)	9.5	10.0	10.8	6.6	3.2	2.5	3.1
Domestic loan-to-deposit ratio (%)	104.9	101.9	91.7	84.1	73.8	74.8	74.4
Profitability²⁰⁷							
ROE (%) ²⁰⁸	13.9	6.3	9.7	3.1	5.3	10.1	–
ROA (%) ²⁰⁹	1.4	0.7	1.2	0.3	0.5	1.0	–
Cost-to-income ratio (%) ²¹⁰	53.2	58.1	60.0	65.2	64.9	58.6	–
Capital adequacy²¹¹							
Own funds (millions of euro)	2 910.2	3 063.7	2 697.3	1 936.8	2 315.4	2 326.9	–
CET1 capital (millions of euro)	2 471.0	2 732.0	2 454.2	1 802.6	2 219.5	2 233.0	–
RWA (millions of euro)	14 269.0	14 844.3	12 091.3	9 188.8	8 633.5	9 216.8	–
Total capital ratio (%)	20.4	20.6	22.3	21.1	26.8	25.2	–
CET1 capital ratio (%)	17.3	18.4	20.3	19.6	25.7	24.2	–
Leverage ratio (%)	9.2	9.6	10.4	9.3	10.1	10.1	–
Liquidity²¹²							
Liquid assets to total assets ratio (%) ²¹³	33.8	37.4	31.8	32.1	35.6	35.3	35.8
LCR (%)	342.7	313.4	252.9	286.3	353.7	288.9	320.7
NSFR (%) ²¹⁴	148.5	146.0	138.2	144.9	155.9	186.9	194.2
Asset quality²¹⁵							
Ratio of provisions for NPLs in the loan portfolio (%)	4.2	3.7	3.1	3.3	1.9	1.6	1.5
Share of loans past due over 90 days in the loan portfolio (%)	4.7	4.2	4.0	3.9	2.3	1.5	1.6
Share of NPLs in the loan portfolio (%)	9.3	8.5	7.5	7.1	4.7	3.6	3.7

²⁰⁷ Indicators for 2016–2021 have been calculated based on FCMC consolidated-level data. The one-off effects referred to in Chapter 2 "Development and Risks of the Credit Institution Sector" have not been excluded from profitability ratios.

²⁰⁸ Annualised profit/loss ratio to average capital and reserves of the reporting period (excluding data of foreign credit institution subsidiaries).

²⁰⁹ Annualised profit/loss ratio to average assets of the reporting period.

²¹⁰ Cost-to-income ratio = (administrative expenses + intangible and fixed asset depreciation and disposal)/(net interest income + income from dividends + net commissions and fees + profit/loss from trades of financial instruments + financial instrument revaluation result + net ordinary income + adjustment for impairment of available-for-sale financial assets) × 100.

²¹¹ Data are shown at the consolidated level.

²¹² Data are shown at the level of individual credit institutions.

²¹³ Liquid assets = vault cash + claims on central banks and other credit institutions + central government fixed income debt securities (those securities having a regular, unlimited market, i.e. they can be sold in a short period of time without considerable loss or used as loan collateral).

²¹⁴ Until June 2021 – Latvijas Banka's estimate.

²¹⁵ The loan quality indicators for 2016–2021 have been calculated based on consolidated-level data for the credit institutions subject to consolidated supervision and on individual-level data for other credit institutions and branches of foreign credit institution (for the first quarter of 2022 – at the level of individual credit institutions). Credit risk ratios have been presented without excluding the one-off effects referred to in Chapter 2 "Development and Risks of the Credit Institution Sector".

APPENDIX 7. HEATMAP OF EARLY WARNING INDICATORS

External macrofinancial risks	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Spread of iBoxx EUR HY NFC securities yield premium (percentage points)																
Dow Jones EURO STOXX 50 volatility index																
CISS of euro area countries (equally weighted, average quarterly value)																
EU economic sentiment indicator (long-term average = 100)																
Imports in the main trade partners (annual changes; %)																
Spread between 10-year and 2-year euro area government bond yields (percentage points)																
3-year changes in the euro area private sector debt-to-GDP ratio (percentage points)																
Domestic macrofinancial risks	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Economic sentiment indicator in Latvia (long-term average = 100)																
5-year CDS spread of the Latvian government (basis points)																
Four-period moving average of annual changes of house price index																
Domestic loan-to-GDP ratio (%)																
Latvian government debt-to-GDP ratio (%)																
Current account-to-GDP ratio (%)																
Household credit risk	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Ratio of the house price index vis-a-vis the average net wage index (%)																
Three-year changes in the households' loan-to-GDP ratio (percentage points)																
Share of households' forbore loans which are not past due over 90 days (%)																
Households' annual interest payments-to-GDP ratio (%)																
Households' loan-to-deposit ratio (%)																
Credit risk of NFCs	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Interest coverage; four-quarter moving average (%)																
NFC debt-to-equity ratio (%)																
Sectoral concentration in the domestic loan portfolio (HH index)																
NFC annual interest payments-to-GDP ratio (%)																
Share of NFC forbore loans which are not past due over 90 days (%)																
Three-year changes in the NFC loan-to-GDP ratio (percentage points)																
Solvency and profitability risk of credit institutions	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
ROA (%)																
CET1 ratio (%)																
Leverage ratio (%)																
Cost-to-income ratio (%)																
Spread of interest rates on new loans (percentage points)																
Investment by credit institutions in the public sector (% of assets)																
Share of the credit institution sector in the financial sector (%)																
Liquidity and funding risk of credit institutions	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
FCMC liquidity ratio for the largest domestic lenders* (%)																
FCMC liquidity ratio for other credit institutions (%)																
Domestic loan-to-deposit ratio (%)																
Net foreign assets-to-assets ratio (%)																

* Data until 2019 and those for 2019 include four and three largest credit institutions respectively since branches are excluded from the calculation of liquidity ratio. The liquidity ratio of this credit institution group is relatively lower as liquidity of subsidiaries is managed at the group level. Although the support provided by the parent bank reduces liquidity risk and the FCMC liquidity ratio is not a mandatory supervisory requirement for these credit institutions, the FCMC liquidity ratio is employed for risk monitoring.

Notes. The heatmap is only one of the tools used by Latvijas Banka for the analysis of systemic financial stability risks. The assigned risk level should not be interpreted in absolute terms. Instead, it should be viewed in comparison with the historical benchmarks of the chosen indicators, warning of the build up of risks. For the explanation of the heatmap methodology, see Appendix "Heatmap: analytical tool for the analysis of systemic financial stability risks in Latvia" of Latvijas Banka's "Financial Stability Report 2018".

The risk level arising from the ratio of the indicator to its average historical benchmark is indicated by colour:

low	medium	medium high	high	no data
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Comments about the 2021 results of the heatmap of early warning indicators

External macrofinancial risks. In 2021, the global economic growth gradually rebounded on account of the increase in vaccination coverage and the introduction of various support mechanisms. However, the invasion of Ukraine drastically changed the outlook for the global economic growth by increasing supply bottlenecks, as well as the growth of energy and commodity prices and uncertainty. Tighter financial conditions in relation to the progress made by the leading central banks towards the normalisation of monetary policy and the increased uncertainty are reflected in higher financial market volatility and episodes of price adjustments in several asset classes. Financing of support measures continues to result in higher levels of sovereign debt and also partly contributes to larger NFC and household indebtedness.

Domestic macrofinancial risks. The progress made with vaccinations and the adjustment of the economy to the pandemic contributed to the economy recovering faster than predicted during 2021. However, in the second half of the year the growth and the economic sentiment were affected by the lack of raw materials and the increased costs, as well as the wave of new restrictions attributed to the spread of the Omicron variant of the Covid-19 virus. In 2021, the government deficit and overall debt level increased due to various support measures. Housing prices rose more sharply. With imports expanding more rapidly, the current account posted a deficit. The war in Ukraine resulted in a considerable contraction of the confidence indicators in March 2022.

Household credit risk. Overall, the creditworthiness of households continued to improve; the aggregate interest burden was low, the payment discipline did not deteriorate. Housing price rises occurred at an accelerated pace in the second half of 2021. Due to booming construction costs and a limited housing supply, housing prices will rise more sharply than the average wage in the future, thus negatively affecting the housing affordability. The share of forborne loans which are not past due over 90 days decreased slightly in 2021 and early 2022.

Credit risk of NFCs. Considerably higher energy prices and supply chain problems significantly increase the NFC production and raw material costs and diminish profitability and liquidity. Financial vulnerability in the sectors hit the hardest by the pandemic is still high. However, until the onset of the war and with NFCs adapting to the pandemic circumstances the share of forborne loans which are not past due over 90 days experienced a slight overall decrease in 2021 and early 2022.

Solvency and profitability risk of credit institutions. 2021 saw profitability return to the pre-pandemic level. Growth of net interest income was mainly driven by the increase of AS Citadele banka's loan portfolio due to the acquisition of SIA UniCredit Leasing. Net income from commissions largely grows owing to payment services (the use of payment cards and credit cards). Credit institutions were able to release part of the precautionary savings built up at the onset of the pandemic; nevertheless, some credit institutions continued to raise them. The spreads of interest rates remained stable, because the borrowers' ability to keep up with at least their interest payments remained broadly unchanged due to the government support measures and moratoria on loan repayments. In early 2022, the profitability indicators were further improved by a one-off transaction. The share of credit institutions' assets in the total financial sector assets continued on a downward trend, since assets of non-bank financial sector grew more rapidly. Solvency risks of systemically important credit institutions remained low; yet the profitability risk of some minor credit institutions has increased due to their exposure to the risks associated with Russia, Belarus and Ukraine.

Liquidity and funding risk of credit institutions. The FCMC liquidity ratio of the largest credit institutions is lower than that of other credit institutions, as they are mostly subsidiaries of Nordic banks with centralised liquidity management and access to additional liquidity from their parent banks; nevertheless, at this point the above credit institutions fully ensure the funding necessary for domestic lending by attracting domestic non-bank deposits. Other credit institutions maintain large liquidity buffers and do not use market-based funding.