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Financial Stability Report 2022

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Financial Stability Report 2022

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SK	Slovakia
TR	Turkiye

Abbreviations

BARS	Banking Agency of RS
GDP	Gross domestic product
BH	Bosnia and Herzegovina
BHAS	BH Agency for Statistics
BoE	Bank of England
BoJ	Bank of Japan
BLSE	Banja Luka Stock Exchange
CAC 40	Cotation Assistée en Continu (French stock exchange index)
CAR	Capital adequacy ratio
CBBH	Central Bank of Bosnia and Herzegovina
CET 1	Common Equity Tier 1
CHF	Swiss franc
CPI	Consumer Price Index
CRC	Central Registry of Credits
DAX	Deutscher Aktien Index (Index at stock exchange in Frankfurt)
DIA	Deposit Insurance Agency
EBA	European Banking Authority
ECB	European Central Bank
EU	European Union
EUR	Euro
FBA	Banking Agency of FBH
FBH	Federation of BH
FED	Federal Reserve System
FTSE	Financial Times Stock Exchange
GBP	Great Britain pound
HHI	Herfindahl–Hirschman Indeks
IMF	International Monetary Fund
KM	Convertible mark
MCO	Microcredit organizations
MFT of BH	Ministry of Finance and Treasury of Bosnia and Herzegovina
NPL	Nonperforming loans
OPEC	Organization of the Petroleum Exporting Countries
ROAA	Return on Average Assets
ROAE	Return on Average Equity
RS	Republika Srpska
RTGS	Real Time Gross Settlement
RRFC	Reference rate for average weighted banks' funding cost
S&P	Standard & Poor's
SASE	Sarajevo Stock Exchange
SRTA	Single Registry of Transactions Accounts
USA	United States of America
USD	Unites States dollar
WEO	World Economic Outlook
WTI	West Texas Intermediate
WTO	World Trade Organization

INTRODUCTION

The Central Bank of Bosnia and Herzegovina (CBBH) understands financial stability as a situation in which a financial system can absorb shocks without any significant disturbances in its current and future operations and whose functioning does not have negative effects on the economy.

The CBBH's authority to monitor the stability of the financial system derives indirectly from the Law on the CBBH. The CBBH plays an active role in the development and implementation of the policy of stability and sustainable economic growth of BH, through ensuring the stability of the domestic currency and overall financial and economic stability in the country. One of the CBBH's basic tasks is to establish and maintain the appropriate payment and accounting systems as part of the financial infrastructure. The CBBH contributes to the preservation of financial stability through its authority established by law to coordinate the activities of Entities' Banking Agencies. In accordance with the decision of the Governing Board, the CBBH participates in the work of international organisations aimed at consolidating financial and economic stability through international monetary cooperation. The activities of the CBBH in the field of monitoring the stability of the financial system also include specialised communication with relevant international and domestic institutions, which ensures the continuity of the process of monitoring systemic risks. CBBH contributes to the preservation of the financial stability through its membership in the Standing Committee for Financial Stability of BH.

By publishing the Financial Stability Report, the CBBH strives to contribute to financial stability in BH through:

- Improving understanding and encouraging dialogue about risks for financial intermediaries in the macroeconomic environment;
- Warning financial institutions and other market participants about the possible collective impact of their individual actions;
- Creating consensus on financial stability and improving the financial infrastructure.

Although the focus of this report is on the events of 2022, its scope has been extended to include the most important events from the first half of 2023, in accordance with the available data at the time of writing this document. The Financial Stability Report for 2022 is organised by chapter as follows. The Summary highlights the most important risks to the financial system stability. The first Chapter presents the main trends and risks from the international environment. As part of this Chapter, the main risks from the EU and the euro area are highlighted, and their effects on the banking sector and the real economy of this geographical area are described, with a focus on risks that can have an impact on the banking sector and the BH real economy. The second Chapter provides an overview of trends and potential risks from the domestic environment that are reflected in the functioning of the BH financial system, including an overview of the fiscal sector main trends and risks. The third Chapter illustrates the effects of the risks identified in the previous Chapters on claims from the households. The fourth Chapter focuses on the effects of identified risks on the sector of legal entities. In the fifth Chapter, the effects of risk on the financial sector stability are assessed, with a focus on the banking sector. The sixth Chapter illustrates the basic trends in financial infrastructure: payment systems and regulatory framework. The Financial Stability Report for the year 2022 contains six text boxes: Assessment of the main macro-financial risks to financial stability, Real estate market, Analytic framework for calibration of counter cyclic protective layer of capital in BH, Network analysis of systemic risk spill overs and Stress tests of solvency and liquidity.

Finally, it should be emphasised that this Report deals exclusively with matters of importance for systemic risk because, in accordance with the laws in force in BH, the supervision of the operations of financial intermediaries is to be performed by the competent financial sector supervisors. Its main goal is to indicate the risks coming from the financial system, as well as the macroeconomic environment, and assess the system's ability to absorb these shocks.

SUMMARY

In the world, the year 2022 was marked by a slowdown in economic activity due to the consequences of the culmination of the Russian-Ukrainian crisis and the beginning of the war, which initially led to volatility in the energy markets, causing significant fluctuations in the oil, gas and electricity prices. In addition to the rise in energy prices, disruptions in supply chains and the rise in commodity prices have contributed to a strong rise in inflation, disproving earlier expectations that inflation could be of a short-term and transitory nature, so that the tightening of monetary policies by the leading central banks followed faster than initially expected. The ECB was the last of the leading central banks to start implementing restrictive measures, and only in the second half of the year, with the end of the pandemic support programmes, did this monetary authority start increasing reference interest rates, in order to fight inflation.

The key risks to the financial stability of the euro area are to the most significant extent directly or indirectly related to the strong growth of interest rates: weak macroeconomic prospects, weakening of the fiscal capacity to amortise shocks due to the growth of external debt after implementing the measures to mitigate the pandemic in countries with a high level of debt, strengthening of credit risk at financial intermediaries due to the difficulty in servicing the debt of households and non-financial corporations, volatility in the stock, bond and foreign exchange markets.

Risks from the domestic macroeconomic environment also recorded growth during 2022. Strong and long-lasting inflationary pressures were reflected in trends in all segments of the domestic economy, especially in the second half of the year, which resulted in an industrial production and export slowdown and the country's worsened balance of payment position.

Indicators from the labour market, such as the number of employed persons and the unemployment rate, recorded an improvement, but there was a significant decrease in the real disposable income of the households due to inflationary pressures that significantly exceeded the growth of nominal wages. Increased consumer optimism after the economy emerged from the corona crisis led to stronger activity on the real estate market in 2022, which was followed by strong price growth.

Measures taken by governments to mitigate the negative effects of inflation resulted in an increase of the fiscal deficit in the general government sector, despite strong revenue growth. International rating agencies kept the long-term credit rating of BH unchanged, and at the beginning of 2023, the S&P agency increased the outlook for BH's credit rating from stable to positive. A positive impulse to increase the outlook of the credit rating was given by the candidate status for membership in the EU, which BH received in December 2022.

The economic recovery in the first half of 2022 increased the households' propensity to spend, which, along with still favourable financing conditions, led to an increase in the demand for loans and an increase in household debt. Nevertheless, strong inflationary pressures and a decrease in the disposable income of the households, as well as a slight increase in interest rates and a tightening of credit standards in the second half of 2022, influenced the slowdown of credit activity. The growth of interest rates at the global level contributed to the increase in demand for loans with a fixed interest rate, and in the second half of the year as many as three quarters of the amount of new loans were contracted with a fixed interest rate. Household deposits in banks, after falling in a short-term episode of strong withdrawal of funds related to the beginning of the war in Ukraine and problems in the operations of banks in majority Russian ownership, continued to grow continuously. In 2022, there were no significant changes in the households' preference regarding long-term time deposits, and the growth of funds in transaction accounts and short-term time deposits in banks continued.

In the household segment, the trend of reducing non-performing loans in banks continued, however, a significant increase in loans at credit risk level 2 was recorded, which indicates that households are faced with certain difficulties in repayment, especially in the segment of loans intended for general consumption. In the coming period, it is certain to expect a continuation of the growth of credit risk in this sector.

The total debt of the sector of non-financial companies to domestic financial intermediaries in 2022 remained at approximately the same level as in the previous year. In financing business activities, the corporate sector, as in previous years, relied mostly on credit support from banks. The modest increase in debt of non-financial companies on the domestic market can be explained by the simultaneous, somewhat stronger, growth of external debt of this sector. Although interest rates began to rise slightly in the third quarter, average interest rates on loans remained at low levels, which enabled companies to borrow on relatively favourable terms. Traditionally, in the corporate sector, loans are mostly contracted with a variable interest rate, however, this sector also expressed a preference for fixed interest rates, and in the second half of the year half of the newly approved loans were contracted with a fixed interest rate.

The share of non-performing loans to total loans was lower compared to the previous year, however, the higher rate of defaults in the sector of non-financial companies indicates that in 2022 there was a materialisation of credit risk in a certain number of companies. The continuation of the weakening of economic activity with the expected growth of interest rates in the coming period will contribute to the further strengthening of the credit risk arising from this sector.

Owing to good financial soundness, the banking sector has successfully amortised risks from the domestic and international environment. In 2022, the banking sector of BH remained adequately capitalised and liquid, asset quality indicators improved, and a significant increase in profitability indicators was recorded. There was no significant credit activity, as indicated by the values of the financial cycle indicators. The prolonged period of low interest rates influenced the further reduction of the average maturity of deposits, and consequently the growth of risks arising from the maturity structure of financing sources. The crisis situation from the beginning of 2022 stemming from the sanctions imposed by the EU on Russian-owned banks was overcome by the quick and successful intervention of domestic regulators, and the risk of a sudden and uncontrolled withdrawal of citizens' deposits from banks from taking on wider proportions and threatening financial stability was prevented.

The expected growth of interest rates and negative macroeconomic trends, to a certain extent, put pressure on the ability to further borrow and regularly service obligations in both key segments of the domestic private sector. Banks, aware of the risks of the active adjustment of interest rates on previously contracted loans with a variable interest rate linked to EURIBOR, gradually and slightly increased interest rates, and the growth of interest rates in BH in 2022 was limited, while new loans were granted more intensively with a fixed interest rate. Although the credit risk was significantly mitigated in this way, along with the already fairly certain pressure of continued growth of interest rates, such practices could represent a risk to the stability of banks' net interest margins in the medium term. With the aim of reducing risks to bank operations and overall financial stability, the CBBH and banking agencies have developed a Methodology for calculating the reference rate of the average cost of financing banks operating on the territory of Bosnia and Herzegovina, which will offer domestic banks the choice of using these rates as reference values in loan agreements with a variable interest rate. The rates will be published and available for application from September 2023 and will provide banks that are financed from predominantly domestic sources with the possibility of better management of interest-induced credit risk.

As a result of the continuation of the economic activity slowdown, in the coming period, an increase in risk can be expected, namely the risk that has been identified as the most significant one in the domestic banking sector, the credit risk. Nevertheless, good capital positions and high liquidity of the banking sector leave enough room for banks to absorb risks, which is supported by the results of stress testing, which indicate that the banking sector is able to amortise very strong macroeconomic shocks.

In 2022, the Central Bank of BH fulfilled its legal obligation to maintain appropriate payment systems. Payment transactions were carried out smoothly through giro clearing and real-time gross settlement (RTGS) systems. The Central Registry of Credits (CRC) and the Single Registry of Business Entities Accounts (SRBEA) were maintained, and the execution of transactions through the international clearing of payments with foreign countries proceeded smoothly. In 2022, domestic regulatory institutions continued to adopt new by-laws with the aim of harmonising with EU standards. At the end of the year, the Deposit Insurance Agency of BH increased the amount of insured deposits with banks from KM 50,000 to KM 70,000, and the activities of the Banking Agencies were the most intensive in the bank rehabilitation segment.

At the beginning of 2022, the banking agencies successfully implemented the restructuring process over Sberbank a.d. Banja Luka and Sberbank BH d.d. Sarajevo, which prevented the collapse of these banks, which could have had wider negative consequences for financial stability. During the first half of 2022, decisions were made that abolished temporary measures for the banking sector, the leasing sector and microcredit organisations, aimed at mitigating the negative economic consequences caused by the emergence of the corona virus. On the other hand, due to inflationary pressures and the growth of macroeconomic risks accompanied by the growth of interest rates on the international market, in the second half of the year the banking agencies adopted Decisions on temporary measures to mitigate the risk of interest rate growth in BH, the main goal of which is to timely manage the credit risk, protect the users of financial services and preserve the banking sector stability.

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TRENDS AND RISKS FROM THE INTERNATIONAL ENVIRONMENT

1. TRENDS AND RISKS FROM THE INTERNATIONAL ENVIRONMENT

The main characteristics of the global economy in 2022 are: inflationary pressures that caused central banks to tighten monetary policy faster than originally expected, rising commodity prices and increased pressure on supply chains, which led to a slowdown in real GDP growth in developed and developing economies. During 2022, the geopolitical risks of the war in Ukraine were also pronounced, leading to volatility in the energy markets and causing significant fluctuations in the oil, gas and electricity prices. The increase in interest rates and additional fiscal support measures to mitigate the effects of inflation are happening in the context of an already increased external debt in many countries following the fiscal measures taken to alleviate the consequences of the pandemic. In the context of the tightening of global monetary policy and with increasing public sector debt and more expensive financing, concerns have increased about the fiscal capacity to mitigate potential future shocks or even the sustainability of fiscal positions and possible debt crises, especially in countries with high levels of debt. Higher financing costs make it more difficult to service the debt of households and non-financial corporations, and make them more vulnerable to shocks. Uncertainty about the macroeconomic outlook due to measures taken by central banks to curb inflation has led to increased volatility in the stock, bond and foreign exchange markets. The IMF expects a slowdown in global growth in 2023.

1.1. Trends in the international environment

After the economic activity recovered in 2021, a slowdown in economic growth marked 2022 due to the war in Ukraine and the tightening of monetary policy by central banks in order to lower the high inflation. Global output growth of 3.4% was recorded in 2022, with developed countries recording a growth of 2.7% and developing countries recording a slightly stronger growth of 4% (Table 1.1).

According to IMF projections from April 2023, the global economy is expected to grow by 2.8% in the current year, while a growth of 3% is projected for 2024. The IMF also expects global inflationary pressures to ease, albeit at a slower pace than previously forecast, from 7% in 2023 to 4.9% in 2024. The projections reflect the expected effects of measures taken to moderate inflation, as well as the consequences of worsening financial conditions, the war in Ukraine and growing geo-economic fragmentation.

Table 1.1: Real GDP, Annual Growth Rate

	Real GDP, annual growth rate					Change relative to the October 2022 projection	
	2020	2021	2022	2023	2024	2023	2024
The World	**-2.8**	**6.3**	**3.4**	**2.8**	**3.0**	**0.1**	**-0.2**
Developed economies	-4.2	5.4	2.7	1.3	1.4	0.2	-0.2
USA	-2.8	5.9	2.1	1.6	1.1	0.6	-0.1
EU	-5.6	5.6	3.7	0.8	1.6	0.1	-0.5
Euro area	-6.1	5.4	3.5	0.8	1.4	0.3	-0.4
Great Britain	-11.0	7.6	4.0	-0.3	1.0	-0.6	0.4
Japan	-4.3	2.1	1.1	1.3	1.0	-0.3	-0.3
Developing countries and emerging markets	-1.8	6.9	4.0	3.9	4.2	0.2	-0.1
Russia	-2.7	5.6	-2.1	0.7	1.3	3.0	-0.2
China	2.2	8.5	3.0	5.2	4.5	0.8	0.0
European developing countries and emerging markets	-1.6	7.3	0.8	1.2	2.5	0.6	0.0
Main foreign trade partners							
Germany	-3.7	2.6	1.8	-0.1	1.1	0.2	-0.4
Croatia	-8.6	13.1	6.3	1.7	2.3	-1.8	-0.7
Serbia	-0.9	7.6	2.3	2.0	3.0	-0.7	-0.5
Italy	-9.0	7.0	3.7	0.7	0.8	0.9	-0.5
Slovenia	-4.3	8.2	5.4	1.6	2.1	-0.1	-0.9
Austria	-6.5	4.6	5.0	0.4	1.1	-0.6	-0.8
Montenegro	-15.3	13.0	6.4	3.2	3.0	3.2	3.0

Source: World Economic Outlook, IMF, April 2023, CBBH

China's GDP grew at a rate of only 3% in 2022, which is a rate below the government's target level of around 5.5% and the second lowest growth rate in the last fifty years, excluding the pandemic year of 2020. In 2022, China re-introduced lockdown measures to prevent the spread of corona virus, leading to a decrease in demand and shocks on the supply side, which significantly limited economic growth. After these measures were lifted, several larger waves of the epidemic occurred, which led to a new economic slowdown and disruptions in supply chains. The prolonged crisis in the construction sector of this country, the decrease in real estate sales, as well as the decrease in investments have increased volatility in other sectors as well. The Chinese authorities responded to the slowdown in economic activity with additional incentives, tax cuts and tax breaks for companies and monetary policy remained expansive. China's economy showed signs of a slight recovery in the first quarter of 2023, with a GDP increase of 4.5% compared to the same period of the previous year, after the complete lifting of restrictive measures. Industrial production, trade surplus, retail sales as well as credit activity recorded a strong growth and in 2023 the Chinese economy is expected to grow at a rate of 5.6%[1], which is still a lower rate than the average recorded by the Chinese economy in previous years.

In 2022, the US economy recorded a growth of 2.1%, thanks to the growth of personal consumption. Nevertheless, the increase in interest rates, aimed at suppressing strong price growth, had a restricting effect on economic growth. The reference interest rate was raised in the first quarter of 2022, at a time when a negative annual real GDP growth rate of -1.6% was recorded. Economic recovery was absent in the second quarter of 2022 as well, with a contraction of the real estate market, a slowdown in the labour market, and a fall in real wages. The real GDP recorded a 3.2% growth in the third quarter, reversing the downward trend from the previous two quarters, mostly thanks to the increase in exports and the decrease in imports, along with the increase in personal consumption, business investments, as well as government spending. Real GDP growth in the last quarter of 2022 was 2.6%, and the decrease in the growth rate was mainly caused by the slowdown in personal consumption and business investments. The US economy continued to grow in the first half of 2023, thus avoiding the expected recession, although the annual growth rate was only 2% in the first quarter. While business sentiment declined and business investment slowed down, growth in personal consumption made a positive contribution to overall GDP growth. Nevertheless, analysts indicate that there is still a danger of a short recession beginning in the fourth quarter of 2023.

In 2022, the euro area economy recorded 3.5% growth on an annual basis, predominantly driven by domestic demand, i.e. there was a net increase in household consumption, as well as investments. The recovery of the service and tourism sectors also made a significant contribution to GDP growth in the first half of the year. However, a shock associated with the beginning of the war in Ukraine in the first quarter led to a strong rise in the prices of energy and goods, and a decrease in trade with Russia, the main source of imports of oil and natural gas for euro area countries, negatively impacting the euro area economic activity. A strong rise in inflation, largely resulting from rising energy prices, led the ECB to raise its benchmark interest rate earlier than originally expected. The rise in interest rates has consequently increased the debt servicing costs and credit risk in the corporate and household sectors. The growth of risks led to a slowdown of the economic activity in the third quarter and increased fears of the euro area economy entering recession. Fiscal support aimed at mitigating the effects of high energy prices resulted in an increase in the level of public debt of euro area countries. Increased interest rates exacerbate the vulnerabilities to the risk of refinancing, especially for countries that already have high levels of public debt. The slowdown recorded in the third quarter, due to the abovementioned combination of shocks (inflationary, monetary, geopolitical, energy), turned into a slight decline in GDP in the last quarter of 2022, of -0.1% on a quarterly basis.

In the first half of 2023, the drop in energy prices eased the pressure on inflation and contributed to the improvement of the growth outlook. However, geopolitical tensions are still strong, inflation expectations are high, the growth of core inflation is slowing down significantly less than headline inflation, which is why the prospects for economic growth of the euro area remain weak, in an environment of tightened financing conditions. A technical recession was recorded in the euro area in the first quarter of 2023, given that GDP decreased for the second consecutive quarter by 0.1% compared to the previous quarter. Also, the euro area banking sector faced the risk of spill over of the negative effects of risk materialisation in Credit Suisse Group AG, one of the global systemically important banks.

By implementing a restrictive monetary policy during 2022, the leading central banks tried to moderate the strong growth of inflation (Graph 1.1). The Bank of England was the first of the world's leading central banks to increase the reference interest rate, from 0.1% to 0.25% in December 2021, when it also ended its quantitative easing programme, which was followed by another increase to the level of 0.5% in February 2022. In the course of 2022, the Bank of England increased the reference interest rate another seven times to the level of 3.5% at the end of the year. The interest rate was increased three more times in the first half of 2023, and is currently at the level of 4.5%.

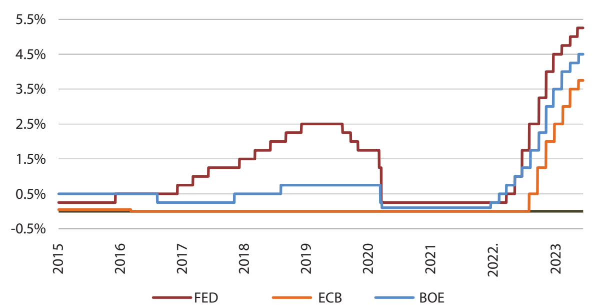
At the beginning of 2022, the FED announced an increase in reference interest rates and the end of asset purchases under the quantitative easing programme. The first increase in interest rates took place in March, and by the end of the year, the FED increased interest rates seven times from the range of 0.25% - 0.50% to the range of 4.25% - 4.50%. The increase in the reference interest rate was significantly higher and more fast-paced than previously announced, given that inflation in the USA was growing strongly and reached the highest level in the last forty-one years in June 2022. In June, the FED also started with quantitative tightening by deciding to stop reinvesting maturing bonds. In the first half of 2023, the FED continued to raise reference interest rates, but at a slower pace (by 25 basis points each at the first three

[1] *World Bank, Sustaining Growth through the Recovery and Beyond – China Economic Update, June 2023, https://thedocs.worldbank.org/en/doc/a9fcfb131b5dc335abe8d283998fd9f6-0070012023/original/CEU-June-2023-EN.pdf*

meetings) due to the obvious slowdown in inflation growth. Reference interest rates were in the range of 5.00 - 5.25% after the May meeting, while the FED decided to keep the interest rates unchanged at the June meeting, in line with expectations, thanks to data indicating that the US economy is stronger than previously expected and that there was a decrease in inflation to 4%, which is the lowest rate in the last two years. At the same time, the FED announced that by the end of 2023 there could be two more small increases in interest rates. Although the monetary policy measures proved to be effective in achieving the primary macroeconomic goals, the strong growth of interest rates led to significant losses in banks whose assets were invested in debt instruments. At the beginning of 2023, this led to the collapse of two banks and triggered strong turbulence in the US banking sector, which could easily have spilled over the borders if rescue measures had not been taken in time. Rising interest rates significantly raised yields on the bond market, which resulted in unrealised losses on securities held by the banking sector, and large losses for some small and medium-sized banks in the US, with weak internal risk management processes. On 22 March 2023, the FED approved the ninth increase of interest rate, which followed the sudden collapse of Silicon Valley Bank (SVB), that occurred in part due to the loss of the value of this bank's assets, when interest rates began to rise. Securities accounted for almost 60% of this bank's assets at the end of 2022. In addition, the vast majority of deposits were uninsured, making the bank particularly vulnerable to sudden deposit withdrawals, which ultimately occurred when the bank's customers withdrew USD 42 billion in just 24 hours, forcing SVB to sell its securities at a significant loss compared to the previous year, which led to the collapse of the bank. It was the second largest bankruptcy of a bank in the history of the USA and the largest after the financial crisis of 2007-2008. After the collapse of SVB, Signature Bank also went bankrupt, while at the end of April, First Republic Bank was taken over by JPMorgan Bank after facing similar problems. The materialisation of risk in these banks had a negative impact on investor confidence, which led to an increase in the risk premium and a fall in share prices in the banking sector. Nevertheless, the quick reaction of the regulator prevented further spread of negative effects on the rest of the banking system. Federal regulators - the FED, the Federal Deposit Insurance Corporation (FDIC) and the US Department of the Treasury took immediate action to protect deposits at both banks by applying a rarely used "systemic risk exception" whereby the FDIC insures all deposits of the affected banks and introduced a separate line of credit to prevent the collapse of these banks from causing further spill over into the banking sector. Prompted by these events, the Bank for International Settlements (BIS) began research into the need to adopt more comprehensive rules on capital and liquidity requirements to ensure that banks can withstand rising interest rates.

The ECB started raising reference interest rates later, but the increase in interest rates in 2022 by 2.5 percentage points was stronger than ever recorded. The ECB first began to reduce the volume of net asset purchases and in March 2022 it ended purchases under the pandemic emergency purchase programme, while from 1 July 2022, it stopped carrying out net purchases as part of the asset purchase programme. At its July meeting, the ECB raised all three key interest rates by 50 basis points for the first time since 2011, beating market expectations and its own guidance of a 25-basis-points increase. The key rates were then additionally increased by 75 basis points each at the next two meetings, and by 50 basis points at the last meeting in 2022 held in December. In 2023, interest rates were increased by an additional 150 basis points at four meetings. ECB reference interest rates at the end of June 2023 are at the levels of: deposit facility rate 3.5%, main refinancing operations rate 4.0% and marginal lending facility rate 4.25%, which are the highest levels recorded in the last 14.5 years. In accordance with the newly published forecasts, additional increases in interest rates have been announced at the next ECB sessions, considering that the target inflation level of 2% is not expected to be reached even by 2025. The ECB also announced that the reinvestments of the principal payments from maturing securities from the asset purchase programme would be discontinued as of July.

Graph 1.1: Trend of Benchmark Interest Rates of Leading Central Banks



Source: FED, ECB, BOE
Note: The graph shows the upper limit of the FED benchmark interest rate interval;
The World Health Organisation declared the pandemic of coronavirus in March 2020;
Bank of England in December 2021 was the first of the key central banks to raise the benchmark interest rate.

Certain central banks recorded losses in 2022, mostly as a reflection of the increase in the balance sheets of central banks resulting from the quantitative easing programme and the maturity mismatch of assets and liabilities of central banks in an environment of rapidly rising interest rates. In the Eurosystem example, the impact of the asset purchase programme[2] as well as long-term refinancing operations[3] on the increase of the Eurosystem balance sheet size from 20% of GDP in the fourth quarter of 2014, when the asset purchase programme began, to 59% of GDP in the first quarter of 2023 was evident. Bond purchases created a

[2] *Asset Purchase Programme – APP and Pandemic Emergency Purchase Programme - PEPP*

[3] *Long Term Refinancing Operations - LTRO*

maturity mismatch in the balance sheets of central banks, whereby central banks paid short-term interest rates on their liabilities (deposits of commercial banks), which in the observed period were negative and significantly lower than the interest rates that central banks achieved by purchasing long-term bonds with a fixed interest rate on the asset side. On the liabilities side, reserves and deposits of commercial banks with central banks have increased, and with the increase in reference interest rates, the fees paid by central banks to commercial banks have also increased rapidly. In contrast, on the asset side, the effective yield on the government bond portfolio rose gradually, with low-yield bonds maturing and getting replaced by higher-yield bonds. Given that the yield curve is inverted, the cost of interest on deposits becomes higher than the interest earned on securities, which is why the net interest income of central banks came under strong pressure. At the same time, the increase in interest rates reduced the market value of the portfolio of foreign exchange reserves invested in securities, which is valued through other comprehensive income, putting significant pressure on the value of capital. The consequences are particularly pronounced in the case of the German central bank, Deutsche Bundesbank, which had exposure to the American capital market, however, thanks to adequate provisions from previous years, it did not report a negative financial result. Of the more important European central banks outside the Euro system, losses were recorded by the Swiss National Bank (SNB), whose loss amounted to 17% of GDP, followed by the Swedish Central Bank (Riksbank), and the Bank of England (BoE).

National central banks of the euro area value securities held for monetary policy purposes at amortised cost, which means that changes in the value of these securities do not affect the balance sheet positions, unless the securities are sold, when gain or loss is recorded. For this reason, the lower market values of bonds from the APP and PEPP programmes were not reflected in the profit and loss account, nor the capital value.

Oil prices have recorded increased volatility during 2022. The first half of the year was marked by a significant increase in the price of oil due to increased demand in the post-pandemic recovery of economies, and limited supply due to the outbreak of the war in Ukraine, which led to an interruption in oil production and trade, as well as sanctions on the import of crude oil and certain oil derivatives from Russia introduced by EU countries, and OPEC production cuts (Graph 1.2). The price of crude oil exceeded USD 100 per barrel in March 2022 for the first time in several years. Already high crude oil prices rose further when China began loosening restrictions related to the coronavirus in late May 2022, while the EU announced plans to cut Russian oil imports by 90% by the end of the year. However, the second half of the year saw a decline in the oil price, which to a large extent neutralised almost all the previous increases, due to weaker demand from the largest importer, China, as well as due to the agreement between the USA and Saudi Arabia to increase daily oil production by one million barrels. The strengthening of the dollar during the year influenced the growth of the price of oil, and ultimately the price of oil at the end of 2022 recorded an increase of about 10% on an annual basis.

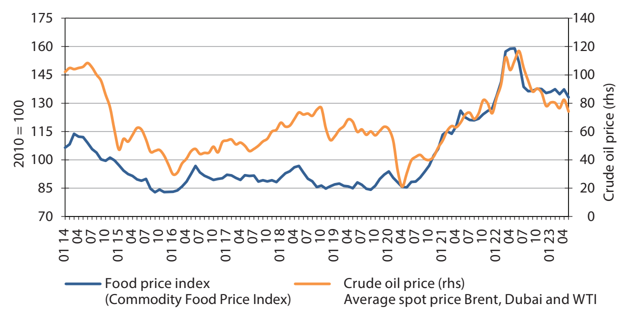
An EU ban on maritime imports of Russian crude oil came into effect in December 2022, combined with a price limit of $60 per barrel by the EU, the G7 and Australia. This was followed by an embargo on refined petroleum products in February 2023. Volatility in oil prices was limited despite the sanctions. At the beginning of April, producers of the OPEC+ countries unexpectedly announced a reduction in oil production by about 1.6 million barrels per day. The surprise move came amid fears of a global recession and a commitment by OPEC+ countries to support oil prices by curbing supply. The price of Brent crude rose by over 6% after this announcement, reaching a peak of $86.96 per barrel in mid-April 2023. However, the price then declined again due to concerns about persistent inflation, declining economic growth in the US combined with problems in the banking sector and risks of US debt defaults if a debt ceiling deal was not reached reducing investor confidence.

Rising energy prices, including natural gas and coal, have also sharply raised the cost of electricity production. The growth of wholesale electricity prices was most pronounced in Europe in 2022, where prices on average were more than twice as high as in 2021. An exceptionally mild winter in Europe helped lower wholesale electricity prices, which are still high compared to previous years. The increased futures prices for the coming winter reflect uncertainties regarding gas supply in Europe during 2023. A number of responses to the energy crisis have been implemented in the EU. In order to reduce reliance on fossil fuels and increase resistance to price shocks, the European Commission announced in May 2022 its REPowerEU plan to accelerate the use of energy produced without pollution and harmful effects on the environment. To mitigate the effects of high electricity prices on consumers, many countries have introduced measures such as regulation of wholesale and retail prices, reductions in energy taxes and VAT, and direct subsidies.

The prices of other raw materials without energy also recorded a significant increase in the first half of 2022, due to interruptions in deliveries and increased production costs. However, the trend of rising food and energy prices after the Russian invasion of Ukraine was reversed in the second half of 2022, due to a slowdown in economic growth, a moderate winter and redistribution in commodity trade. The slowdown in food price growth and the decline in energy prices continued in the first half of 2023. According to World Bank estimates[4], commodity prices are expected to decrease by 21% in 2023 compared to last year, while energy prices are expected to decrease by 26% this year. Brent crude oil prices are expected to average $84 per barrel in 2023, down 16% from the 2022 average. It is also predicted that natural gas prices in Europe and the US will be halved in 2023 compared to 2022, while coal prices are expected to drop by 42% in 2023.

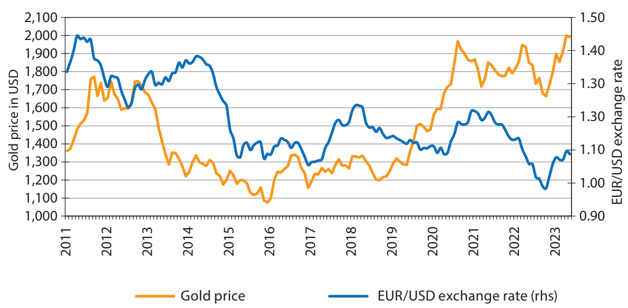
(the average price was USD 1,800 per ounce), due to the growth of geopolitical and macroeconomic risks and uncertainties. The price increase continued in the first half of 2023, due to the effect the reopening of the Chinese economy had on boosting the demand for this precious metal, as well as the effects of the turmoil in the American banking sector and a pause in FED's reference interest rate increases.

Graph 1.2: Food and Oil Prices



Source: the World Bank

Graph 1.3: Gold Price and EUR/USD Exchange Rate



Source: World Bank, Bloomberg

Trends on the world foreign exchange markets in 2022 are also marked by the impact of rising inflation, changes in the monetary policy of leading central banks, and growing macroeconomic risks. During most of 2022, the euro was weakened and the US dollar strengthened by the FED's much stronger anti-inflation measures compared to the ECB; by the consequences of the Ukrainian war, and especially high energy prices, which affected the euro area economy far more than the USA; by the slowdown of the Chinese economy, which is more significantly connected to the EU than to the USA; and investor concerns about rapidly growing geopolitical and economic risks that have prompted a safe-haven search for the dollar. Although a slight reversal was recorded at the beginning of 2023, the dollar exchange rate remained at a slightly higher level in the first quarter compared to the average from the previous year (Graph 1.3).

In 2022, the price of gold continued the upward trend of the previous year, and reached new record levels at the beginning of 2023. The price of gold recorded a significant increase at the beginning of 2022, due to the rise in demand for safer assets, which corresponds to the beginning of the war in Ukraine. The dollar exchange rate and the monetary policy of the US central bank have a strong influence on the price of gold, which was evident when the dollar exchange rate reached a twenty-year maximum and the price of gold fell to a three-month minimum. Nevertheless, the demand for gold in 2022 as a whole recorded the strongest increase in the last ten years, raising the price of gold to a record high level

1.2. Survey of the main risks in the EU and the euro area

Prolonged high inflation required a sharp rise in interest rates, with uncertainty over how long the increase in reference interest rates would last in the euro area. Uncertain prospects regarding the course of inflation and interest rate hikes also affect the real economic outlook. Financing conditions for non-financial companies and for households in the euro area were significantly tightened in the observed period. The long-term trend of real estate price growth has been interrupted, which causes concern about the possibility of significant corrections in certain segments of the real estate market or in certain countries. The EU banking sector has shown strong resilience in the face of unexpected turmoil in the US and Swiss banking sectors, although liquidity risk has increased. Due to the increase in interest rates, the risk of asset quality deterioration has also increased.

The key risks to financial stability are: weak macroeconomic prospects, corrections on financial markets, over-indebtedness of the non-financial sector and households, and the impact of higher interest rates on debt servicing of companies, governments and households, as well as the quality of banking sector assets.

[4] *A World Bank Report, Commodity Markets Outlook, April 2023, https://bit.ly/CMO042023FullEN*

1.2.1. Effects on the banking sector

Capitalisation indicators of euro area banks recorded a decline in 2022, due to a significant increase in lending and higher risk-weighted assets. The Common Equity Tier 1 (CET1) rate for systemically important institutions at the end of the fourth quarter of 2022 recorded a slight decrease compared to the previous year and amounted to 15%. The increase in risk-weighted assets was mainly due to the strong growth in lending to non-financial corporations.

Euro area bank profitability improved in 2022, supported by lower operating expenses, still low loan loss provisions and higher income thanks to wider margins and higher lending volume. The total return on equity (ROE) of the euro area systemic banks was 7.6%, an increase of 1 percentage point compared to the previous year. Interest margins increased due to a significant increase in reference interest rates starting in mid-2022, while banks adjusted deposit interest rates more slowly. Due to the slow growth of interest rates on deposits, withdrawals of deposits from European banks occurred in search for a better yield, which increased the liquidity risk. Also, increased lending made a positive contribution to the growth of net interest income in most euro area countries.

Several days after the collapse of US regional banks, Silicon Valley Bank and Signature Bank, due to sudden deposit withdrawals in March 2023, Swiss authorities announced the merger of Credit Suisse Bank with UBS Bank following the loss of confidence in Credit Suisse Bank, marking the first failure of a global systemically important bank since the 2008 financial crisis. As a result, the share prices of American and European banks fell significantly in March 2023. Faced with a potential loss of confidence in the banking system, the authorities and regulators reacted quickly and enacted a number of strong measures, which reduced the risks to financial stability and prevented the further spread of the crisis. The Swiss authorities acted decisively through the merger of Credit Suisse bank with UBS with the support of the state, which included liquidity support and fiscal support. Despite the aforementioned problems in the banking sector and the slowdown in lending dynamics, further growth of the profitability of banks in the euro area is expected in 2023, as a result of the expected increase in net interest income, which is greater than the potential impact of tightened credit standards. However, these estimates of the further profitability of euro area banks assume that future credit losses will remain limited. Nevertheless, the profitability of banks in the coming period may be negatively affected by stricter bank lending standards, the decline in demand for loans and the subdued dynamics of corporate lending.

The quality of banks' assets improved in 2022, primarily owing to the sale and securitisation of loan portfolios, although certain signs of deterioration in the quality of the loan portfolio are noticeable. Corporate default rates in the euro area increased in the second half of 2022, but are still at low levels. Early warning signs of deterioration in asset quality became more pronounced, as there was an increase in loans at credit risk level 2, due to the deterioration of economic prospects. After the ECB raised the reference interest rates, there was a strong slowdown in the growth of real estate prices, that had previously recorded a significant growth in the period since the beginning of the corona virus pandemic. If the fall in real estate prices, especially for commercial purposes, continues, credit risk may materialise in this segment. The most significant deterioration in the quality of the credit portfolio of households was recorded in consumer and other (non-mortgage) loans. In both of these segments, there was an increase in loans at risk level 2 due to worsening economic conditions and high inflation. Prolonged high inflation and rising interest rates can negatively affect the ability of the households to service their debt regularly.

The credit ratings of banking groups operating in BH were confirmed in 2022, while the outlook was unchanged or revised downwards. In March 2022, then in May 2023, the rating agency S&P affirmed the long-term credit rating of Raiffeisen Bank A and maintained its negative outlook, despite its significant exposure to Russia. The realised profit and capital level of this bank were adequate to absorb the initial impacts of its exposure to Russia. This banking group achieved a significantly improved return on equity (ROE) of 16.8% in 2022, after 12% in 2021, due to the increase in net interest margin in all regions of operations. The annual consolidated ROE for the first quarter of 2023 was 15.8%, i.e. 10.4%, if the bank's operations in Russia and Belarus are excluded. However, S&P analysts expect this level of profitability to decline as the conflict between Russia and Ukraine continues and the global economy slows further in 2023. However, thanks to this temporary positive stimulus, Raiffeisen bank significantly improved the CET1 indicator to 16% at the end of the first quarter of 2023, from 12.3% from the previous year. This bank also reported that it will be able to maintain a CET1 ratio of 13.7% after 31 March 2023, under the deconsolidation scenario of its Russian subsidiary. Rating agency Moody's also affirmed the rating of Raiffeisen Bank at level A2 with a stable outlook.

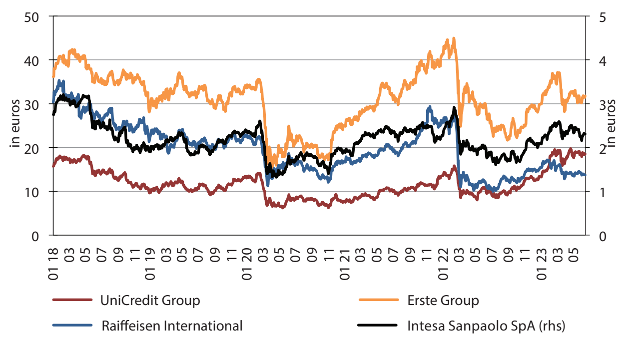
In July 2022, the rating agency S&P affirmed the long-term credit rating of UniCredit SpA and Intesa Sanpaolo SpA banks at the BBB level, and revised the rating outlook of these banks from positive to stable. This revision followed a similar action related to Italy's sovereign credit rating and reflects the S&P agency's view that Italy's economic growth will be slowed by political circumstances that pose risks to the Italian economy and public finances due to a slowdown in the implementation of key reforms. High inflation, tightening of monetary policy and economic slowdown will lead to deterioration of asset quality, while rising interest rates will have a positive effect on the profitability of Italian banks. In August 2022, the rating agency Moody's also affirmed the credit rating of Italy and revised the outlook from stable to negative, thus affecting the rating action of this agency for Intesa Sanpaolo and UniCredit Bank, whose credit ratings were affirmed, while the outlooks were revised from stable to negative.

Rating agencies S&P and Moody's withdrew the ratings of Sberbank Bank in March 2022, while rating agency Fitch withdrew the credit rating of Sberbank Europe AG. With the introduction of sanctions against Russia at the end of February 2022, Sberbank Europe AG, which was fully owned by Sberbank of Russia, that is majority owned by the Russian Federation, faced a liquidity crisis. Sberbank Europe AG and its subsidiaries faced a significant outflow of deposits, which resulted in a deterioration of their liquidity position. The ECB soon announced that this bank was failing, after determining that it was unlikely to be able pay its debts or other liabilities as they fell due. The regulators made a decision to close the Austrian Sberbank Europe AG, while the subsidiary banks in Slovenia, Croatia, Bosnia and Herzegovina and Serbia were taken over by domestic banks, and the subsidiary banks' licences to operate in Hungary and the Czech Republic were revoked by the national central banks[5].

In 2022, the share prices of euro area banks recorded a substantial decline. After the outbreak of the war in Ukraine, at the beginning of 2022, the banking sector of the euro area came under great pressure, and the share prices of banking groups recorded a significant fall, which was followed by a quick correction, given that only a few banks had large exposures to Russia and Ukraine. When it comes to banking groups operating in BH, Raiffeisen Bank International AG recorded the biggest decline in share prices of 40.7% compared to the end of the previous year, while Erste Group recorded a decline of 27.7% (Graph 1.4). The Italian banks Intesa Sanpaolo S.p.A. and UniCredit S.p.A. recorded a slightly smaller decline in the value of their shares of 8.7% and 2%, respectively.

At the beginning of March 2023, the volatility in the financial markets increased sharply, which led to a significant fall in the prices of bank shares. The banking crisis that broke out with the collapse of the American Silicon Valley Bank and then Signature Bank led to fears of contagion spreading to the banking sector of the euro area as well. In this period, the Swiss bank Credit Suisse faced pressure on liquidity due to significant withdrawals of deposits associated with increasing concern for the financial and capital position of the bank that faced a series of challenges in the past few years, such as changes in top management, and losses of several billion dollars. The lack of confidence of clients after repeated scandals and problems in corporate governance, together with the panic that gripped the global banking sector after the outbreak of the American regional banking crisis, intensified the outflow of deposits from this bank. Shares of Credit Suisse Bank lost over 75% of their value since the beginning of 2022, which ultimately led to the takeover of Credit Suisse Bank by UBS Bank at the initiative of Swiss regulators. Regulators also provided additional emergency liquidity lines and guarantees to solve financial stability problems. This banking turmoil has raised global concerns about supervisory practices and the adequacy of risk management tools, and in particular the methodology for hedging interest rate risks in times of rapid monetary policy tightening. However, this sequence of events differs from the global financial crisis, as the global banking system is now more resilient than in 2008 and 2009 thanks to the development of the macroprudential policy framework, the framework for bank restructuring and the improvement of banks' capital and liquidity positions. In the second quarter of 2023, bank share prices partially recovered from the instability that began in mid-March.

Graph 1.4: Trend of Local Banks' Mother Banks' Stock Prices



Source: Bloomberg

1.2.2. Effects on the real sector

The year 2022 was characterised by the fiscal support measures implemented by the euro area member states in order to mitigate the rise in energy prices and inflation. Nevertheless, the budget deficit of the euro area countries amounted to 3.6% of GDP in 2022, which is a significant decrease compared to the previous year when it amounted to 5.3% of GDP. The budget deficit to GDP ratio was reduced due to a higher increase in revenues in a high-inflation environment relative to the growth of budget expenditures, as well as a higher growth of GDP compared to the previous period. The

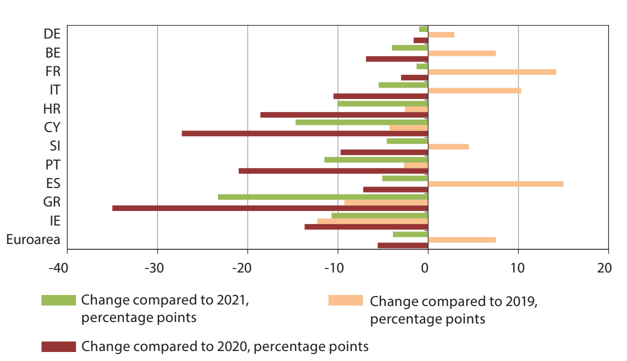
[5] *The effects on banks from the Sber group that operated in BH is described in more detail in the chapters Households, Financial Intermediaries and the subchapter Regulatory Framework, and in Text box 3: The Impact of the War in Ukraine on the Banking System of BH in the Financial Stability Report for 2021 (https://www.cbbh.ba/content/DownloadAttachment/?id=ccada438-f71c-4d81-bd3c-8f9128eedf04&langTag=bs).*

public debt of the euro area member countries was reduced from 95.5% of GDP in 2021 to 91.6% at the end of 2022, due to the increase in the nominal value of GDP, which was greater than the increase in public debt (Graph 1.5). However, the normalisation of monetary policy and the rise of interest rates increased the cost of servicing the public debt. The drop in energy prices at the beginning of 2023 reduced the need for additional fiscal support to ease the energy crisis for households and businesses. Still, some countries have high levels of debt and a need for refinancing in the short term in an environment of rising financing costs.

Nevertheless, even though the yield gap widened during 2022, the euro area bond markets largely exhibited non-fragmented dynamics, with yields on bonds of different countries having similar dynamics.

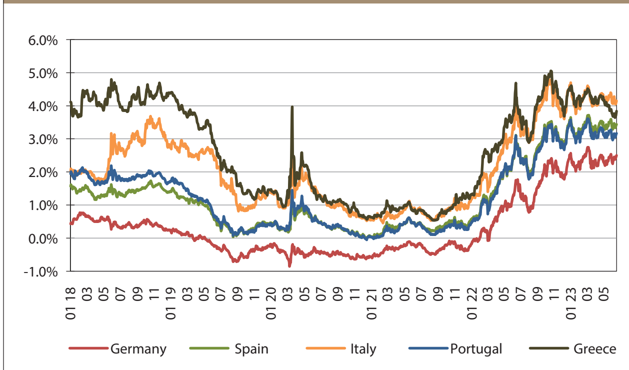
Yield growth continued in the first half of 2023, except in March when problems in the US banking sector and problems with Credit Suisse Bank led to concerns about the outbreak of a banking crisis in the EU, which increased the demand for safer assets and led to rising prices of sovereign bonds of euro area countries and a sharp drop in their yields.

Graph 1.5: Public Debt Changes as Per Cents of GDP in 2022



Source: Eurostat, CBBH

Graph 1.6: Yield of Ten Year Government Bonds



Source: Bloomberg

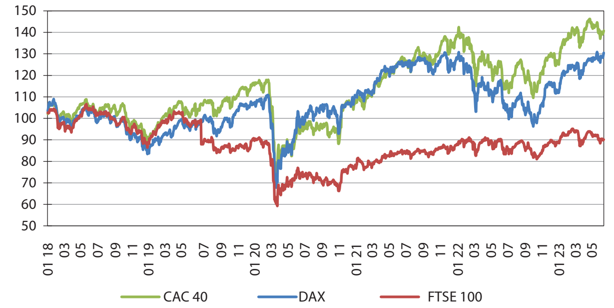
Yields on government bonds of most euro area countries reached record growth in 2022 and exit from the negative zone. Yields on German 10-year government bonds at the end of 2022 increased by 2.75 percentage points compared to the end of 2021, from the level of -0.18% to 2.56%. At the same time, yields on Italian bonds increased by 3.5 percentage points compared to the end of the previous year, from the level of 1.17% to 4.70%. Ten-year bond yields of Greece, Spain and Portugal also recorded strong growth in the same period (Graph 1.6). Immediately after the start of the war in Ukraine, volatility increased on the financial markets, and investors sought safer investments, which led to a short-term rise in bond prices, i.e. a decline in yields. However, a strong rise in the yields of euro area countries' bonds occurred after the ECB signalled a series of interest rate hikes starting in July with the aim of curbing record high inflation. A significant jump in yields was recorded on the bonds of the peripheral countries of the euro area, which led to concerns about the widening gap between the yields on the bonds of southern European countries and Germany and the related risks of financial fragmentation, i.e. the risk of uneven transmission of the normalisation of the ECB's monetary policy in the countries that make up euro area. In response to growing risks, the ECB announced in June 2022 the creation of a new instrument to combat divergences in borrowing costs, in order to reduce the difference in bond yields of core and peripheral euro area countries.

In the course of 2022, the rating agencies upgraded the credit ratings of several countries, and affirmed the credit ratings of most other euro area countries and revised the credit rating outlook upward. In the course of 2022, the rating agency Fitch upgraded the credit ratings of Ireland, Croatia and Portugal, while the credit agency S&P upgraded the long-term credit ratings of Greece, Croatia, Portugal and Cyprus. Rating agency Moody's upgraded the long-term credit rating of Ireland and Croatia.

During 2022, the stock market indices recorded a decline compared to the previous year (Graph 1.7). The outbreak of the war in Ukraine led to an increase in volatility in the markets, and a drop in the value of stock indices. However, this reaction was short-lived, given that the index values recovered in March 2022. However, due to concerns about a possible scenario of an econmic slowdown and increase in inflation, and the response of central banks that caused a rapid rise in interest rates, the value of riskier assets declined in the coming months. The downward trend continued until the end of the year and the European indices recorded the biggest loss in value in the last four years in 2022.

Euro area stock indices recorded strong growth in the first quarter of 2023, boosted by more optimistic macroeconomic expectations based on data pointing to the resilience of the euro area economy, the reopening of the Chinese economy and a sharp drop in energy prices. Good financial results of the companies brought the share prices of the euro area back to a higher level. However, volatility in the banking sector caused investors to shift their funds to safer assets. The fall in stock prices in March 2023 was a reflection of the turbulence in the banking sector of the USA and Europe, however, given that the banking sector remained stable and that there was no deterioration in the basic indicators of banks, nor a downward revision of bank credit ratings, stock market indices have recorded a renewed increase above historical averages until June 2023.

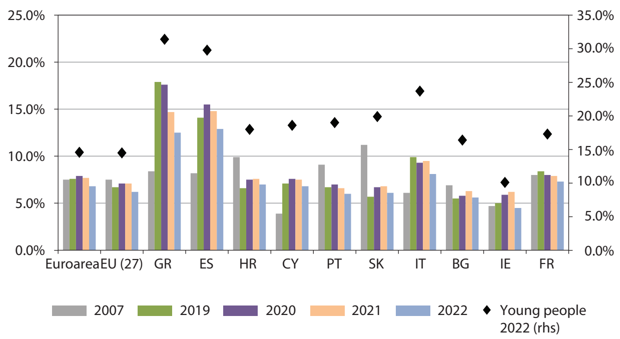
Graph 1.7: Main Market Indices Trends



Source: Bloomberg, CBBH, average value of market indices in 2017 = 100

The euro area unemployment rate continued to decline in 2022, reaching a record low level (Graph 1.8). The unemployment rate in the euro area countries was 6.7% at the end of 2022 and decreased by 0.3 percentage points compared to the previous year. Unemployment growth, unexpectedly, was not one of the characteristics of the post-pandemic labour market in the EU and the inflationary pressure on business costs did not lead to significant layoffs. The post-pandemic labour market is characterised by labour shortages, especially in administration and support services, professional and scientific activities, information and communication technologies and construction, as well as in the hotel industry. The lack of labour in many industries may be the result of a mismatch between the qualifications of workers and the requirements of the jobs they perform, as well as possible changes in workers' preferences.

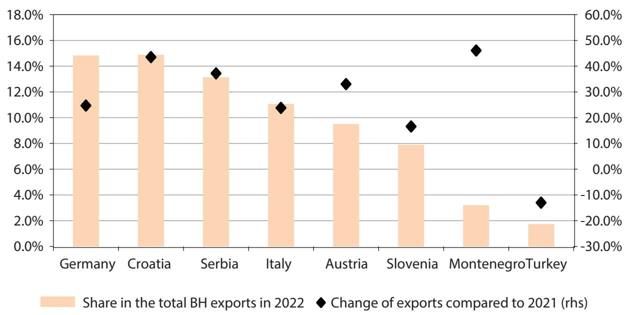
Graph 1.8: Unemployment Rate in the EU



Source: Eurostat

During 2022, there was a significant increase in the value of international trade, due to the growth of economic activity in the first half of the year, and the rise of prices at the global level, which was also reflected in the foreign trade exchange of BH. In 2022, the total export from BH amounted to KM 18.0 billion and recorded an increase of 25.9% compared to the previous year, while the total import amounted to KM 28.6 billion, an increase of 32.6% compared to the previous year. The coverage of imports by exports decreased compared to the previous year and amounted to 62.8%, while the foreign trade goods deficit amounted to KM 10.7 billion compared to 7.3 billion in 2021. Total exports to EU countries increased by 27.2% compared to 2021 and amounted to KM 13.2 billion. Exports to all the main foreign trade partners of Bosnia and Herzegovina increased (Graph 1.9).

Graph 1.9: BH Exports to Main Trade Partner Countries



Source: BHAS, CBBH

Centralna banka
BOSNE I HERCEGOVINE
Централна банка
БОСНЕ И ХЕРЦЕГОВИНЕ

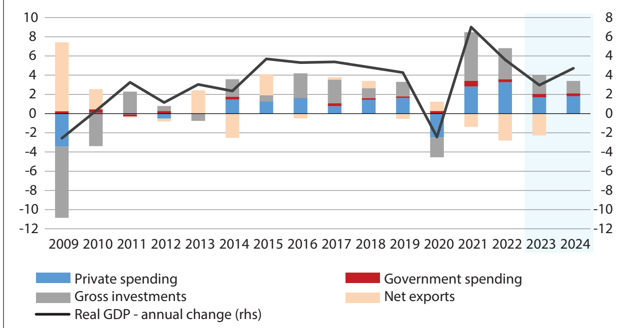
MACROECONOMIC TRENDS AND RISKS IN BH

2. MACROECONOMIC TRENDS AND RISKS IN BH

Strong and long-lasting inflationary pressure was reflected in trends in all segments of the domestic economy, which ultimately resulted in a slowdown in the growth of total real economic activity in 2022. The negative spill over effects of high and long-term inflation were more pronounced in the second half of the year, when a decline in industrial production began to be recorded, with a significant slowdown in export growth under the influence of a decrease in external demand, as well as an increase in the country's external vulnerabilities in the form of a worsening of the country's balance of payments position. Due to strong inflationary pressures, the real disposable income of households decreased significantly, while other indicators from the labour market, such as the number of employed persons and the unemployment rate, recorded a slight improvement. Increased consumer optimism after the economy emerged from the corona crisis led to stronger activity in the real estate market in 2022, which was followed by strong price growth in all cities included in the real estate price index. The sector of the general government of Bosnia and Herzegovina recorded an increase in the fiscal deficit despite the strong growth of the revenue side of the budget, given that governments increased state spending in order to suppress the negative effects of inflation. Despite the significant growth of macroeconomic risks, the indicators of fiscal stability show a moderate exposure to risks, considering that BH belongs to the ranks of moderately indebted countries. Risk growth in the domestic macroeconomic environment can have a negative impact on financial stability, through the growth and materialisation of credit risk in the banking sector in the medium term.

After a strong recovery of real economic activity in the post-pandemic year 2021, a slowdown in the growth of real economic activity was recorded in 2022, in conditions of high uncertainty and strong inflation, which characterised the entire year. Increased consumer optimism as a result of postponed consumption and investment activity of previously started projects, after the exit of the BH economy from the corona crisis, influenced the stronger growth of real economic activity in the first half of 2022, when the real GDP growth rate was 5.9%, and 5.8%, respectively. However, the growth of macroeconomic risks primarily caused by long-term and strong inflationary pressures led to a significant slowdown in real economic activity in the second half of the year, so that in the last two quarters, real economic growth rates were 2.6% and 1.7%, respectively. Observed on an annual basis, the growth of real economic activity in BH was 4% in 2022, which is a slowdown in the growth of real economic activity of 3.1 percentage points compared to the previous year. The biggest contribution to the growth of economic activity in 2022 was made by private consumption and gross capital formation (contribution of 3.3 and 3.2 percentage points), while the contribution of government consumption of 0.6 percentage points increased slightly compared to the previous year (Graph 2.1). In 2022, high export activity was achieved (annual growth of 23.9%), however due to the simultaneously stronger growth of imports of goods and services, the net trade balance of goods and services had a negative contribution to GDP (-2.8 percentage points). Stronger domestic demand was largely supported by inflows based on remittances from abroad, which were higher by 17.6% compared to the previous year, given that, as a result of strong inflationary pressures, the real income of the householdshouseholds in BH as of April 2022 started to decrease (see Graph 2.4). The trend of decreasing real income of the households continued until the end of 2022, which in the last quarter led to a significant slowdown in the growth of personal consumption. In the last quarter, household consumption grew by 3.2% on an annual basis, which was 2 percentage points lower compared to the previous quarter.

Graph 2.1: GDP of BH (Annual Change and Contribution to Growth by Categories)

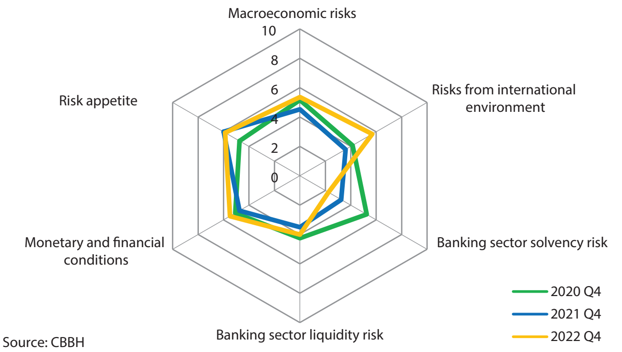


Source: BHAS, CBBH
*For 2023 and 2024 projections by CBBH

Text box 1: Assessment of the main macro-financial risks to financial stability

The assessment of the main macro-financial risks that may arise in the real, fiscal, external or financial sector or as a result of their interconnection, as well as the assessment of monetary and financial conditions and investors' risk appetite, was made on the basis of a quantitative tool (Dashboard). The risk assessment is based on simplified standardisation and ranking of the positions of a comprehensive set of indicators that form the basis for quantifying the synthetic assessment of the degree of risk from different segments of the system. A score in the range of 1 to 5 is an extremely low to slightly moderate degree of exposure to risks; grade in the range of 5 to 8 indicates a moderate to slightly high degree of exposure to risks; a score in the range of 8 to 10 is a high degree of risk exposure. The ranking of ratings for monetary and financial conditions and risk appetite goes in the opposite direction, i.e. an increase in the distance from the centre of the graph means an improvement in monetary and financial conditions, i.e. an increase in the investor's tendency to take risks.

Graph TB 1.1: Macrofinancial Risks Chart



Source: CBBH
Explanation: larger distance from the centre means higher risks, but also improvement of monetary and financial conditions and higher risk appetite.

The total exposure of the financial system to macro-financial risks in 2022 increased significantly compared to the previous year, primarily under the influence of the growth of risks from the international environment that spilled over to the domestic economy, and moved from the territory of a low degree of risk to the territory of a moderate to slightly high degree exposure to risks. The strong growth of risks in the international environment, caused by the geopolitical risks of the war in Ukraine, led to an increase in energy and food prices, and additional disruptions in supply chains at the global level. The growth of risks in the domestic macroeconomic environment was caused by the strong growth of inflation, and the consequent slowdown in the growth of real economic activity. On the other hand, there was a decrease in risks coming from the banking sector as a result of increased solvency and high liquidity, which indicates that the growth of risks in 2022 did not have a significant impact on the operations of the banking sector. In addition to the high inflation that has been persistent througout the entire 2022, a slowdown in real economic activity was recorded in the second half of the year, mostly under the influence of a decrease in private consumption, given that the purchasing power of the householdshouseholds decreased as a result of the high inflation. As an effect of the prolonged slowdown in economic growth and high inflation that will persist in 2023, economic growth projections for the next two years have been lowered, which is why macroeconomic risks are expected to be at an elevated level in the coming period. Additionally, the deepening of the current account deficit of the balance of payments influenced the increase in macroeconomic risks. The growth of risk in the domestic macroeconomic environment is slightly mitigated by the continuation of positive trends in the labour market, and by the reduction of the risk of fiscal sustainability, given that most indicators of fiscal stability recorded an improvement due to significantly stronger nominal GDP growth compared to the increase in the budget deficit and external debt of the general government sector.

A synthetic assessment of the impact of spill over shocks from the international environment on the domestic economy is obtained on the basis of indicators that measure trade and financial linkages in the economy, such as the value of imports and exports expressed as a percentage of GDP, foreign assets and liabilities expressed as a percentage of GDP. When assessing the risk from the international environment on the domestic economy, buffers that serve to mitigate external shocks are taken into account, i.e. the level of foreign exchange reserves expressed in months of imports, then gross foreign exchange reserves as a percentage of the monetary base and changes in the country's foreign exchange reserves. The total risks coming from the international environment have significantly increased in 2022 as a reflection of the growth of global geopolitical uncertainty, disruptions in supply chains and increased energy and food prices, and the growth of borrowing costs on the European market. Stronger trade linkages, which are reflected in the strong growth of the volume of foreign trade exchange of BH in 2022, further increased the risks of spill over from the international environment, which were already in the territory of a high degree of risk. Bearing in mind the expected slowdown in the economic activity of the main export partners and the decrease in external demand, the risks to economic activity and the country's balance of payments position in 2023 have increased. In addition, the increase in interest rates on the European market contributed to the increase in risk from the international environment. In 2022, there was also a slight decrease in the level of foreign exchange reserves, which reduced the level of the buffer that serves the domestic economy to mitigate external shocks.

The solvency risk of the banking sector, which is measured by indicators of financial health and the level of debt of the corporate sector and the households, decreased significantly in 2022. All indicators of financial soundness are at a satisfactory level, and have improved in 2022, which indicates that the growth of risk in the macroeconomic environment has not had significant effects on the operations of the BH banking sector so far. In an unfavourable macroeconomic environment, the banking sector achieved an increase in profitability and an improvement in the quality of the loan portfolio. Due to weaker credit activity and strong growth in nominal GDP, the debt of the corporate sector and the household sector expressed in relation to GDP decreased, which led to an improvement in the overall scoring in the solvency segment.

The liquidity risk is still extremely low in 2022, despite the short-term episode of withdrawal of part of the deposits at the beginning of the year, which was caused by the crisis situation associated with banks from the Sber Group that were majority Russian owned. The crisis situation was successfully remedied by the rapid intervention of the regulator and the transfer of these banks to domestic ownership, and a high level of liquidity was preserved throughout the year. However, in the segment of funding sources, the risk of maturity transformation continues to increase for banks due to the continuous deterioration of the maturity structure of sources of funds, which may be a limiting factor for credit growth in BH.

The assessment of the overall monetary and financial conditions was increased compared to the previous year, considering that due to the strong growth of inflation, with the absence of a significant increase in interest rates, borrowing conditions on the domestic banking market remained very favourable throughout 2022. Despite this, no significant increase in loans to the private sector was recorded, so the value of the *private credit- to-GDP gap* indicator was further deepened in 2022 and indicates below-average credit activity. On the supply side, there was a tightening of credit standards in the granting of loans to non-financial companies and households in the first three quarters of 2022, mostly due to increased risk perception and, in connection with this, banks' lower propensity to take risks. As a result of the growth of the reference interest rates of the ECB and the consequent growth of the EURIBOR, to which the largest number of loans contracted with a variable interest rate is linked, in the second half of the year a very slight increase in interest rates began on the domestic market. The continuation of the restrictive monetary policies of the leading central banks will continue to put pressure on the growth of borrowing costs on the domestic market, which, along with the continued tightening of other financing conditions, could reduce the propensity to spend and credit demand in 2023.

As a reflection of the growth of risks from the domestic and international environment in 2022, there was a slight decrease in the risk *appetite of investors*, as indicated by the relatively modest growth of other investments, which are significantly smaller in the share of GDP, while the share of direct foreign investments remained at the same level of 2.6% of GDP as in the previous year, which is still insufficient for a significant positive impact on economic growth in BH.

In 2022, the highest increase in the volume of real economic activity was achieved in the Accommodation and food service activities (12.7%), Wholesale and retail trade (10%), and Information and communication (9.4%). Thanks to the recovery of demand for tourist services after the end of the corona virus pandemic, in 2022 there was a significant increase in tourist activity in Bosnia and Herzegovina in terms of the number of arrivals and overnight stays of foreign and domestic tourists, which affected the growth of economic activity in the Accommodation and food service industry. The growth of domestic demand had a positive effect on the growth of economic activity in the Wholesale and retail trade.

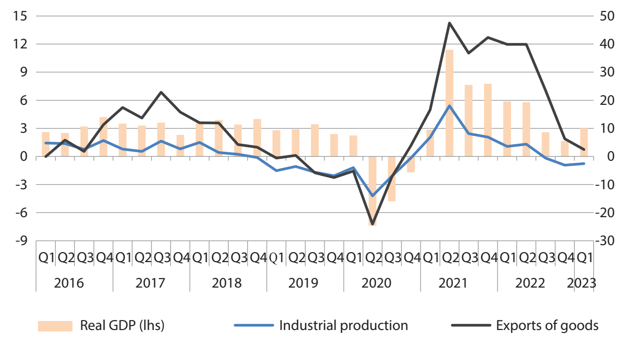
On the other hand, the largest decline in real economic activity was recorded in the Electricity, gas, steam and air conditioning supply (-7.5%), which was to the greatest extent a consequence of the unfavourable hydrological situation in 2022 caused by the drought, due to which there was a significant reduction in electricity production in hydro-power plants in Bosnia and Herzegovina. In addition, a more significant decline in real economic activity on an annual level was recorded in the Mining and quarrying activity (-5.9%) as a result of a decrease in the volume of industrial production in this business activity by 3.3% on an annual basis. The slowdown in the growth of total industrial production, which started as early as mid-2021, had the biggest impact on the decline in the volume of production in the field of production and supply of electricity (-8.8%), so that the total industrial production reached an annual growth of only 1%. Only in the manufacturing industry was production growth recorded on an annual basis (3.9%), with the fact that from mid-2022 the slowdown in production growth is evident in this sector as well due to a significant reduction in external demand and strong inflationary pressures that weigh on the operations of these industries. The contraction of industrial production that began in the third quarter of 2022 was accompanied by a strong slowdown in the growth of goods exports (Graph 2.2). Under the influence of the slowdown in the growth of the economic activity of the main foreign trade partners of Bosnia and Herzegovina and the decrease in external demand, the same trend continued in the first quarter of 2023.

According to the projections of the CBBH[6], in 2023 a strong slowdown in the dynamics of export growth is projected, which, along with a somewhat stronger intensity of import growth, will negatively contribute to economic growth in 2023. The expected decrease in

[6] *Spring round of projections from May 2023*

private consumption, as a key category that will affect the slowdown in the growth of economic activity in 2023, is caused by prolonged inflationary pressures and a decline in the standard of living, which has already been significantly impaired due to the decrease in disposable income of the households. A possible slowdown in the dynamics of the inflow of remittances from abroad would further reduce the growth of private consumption and the purchasing power of the households in BH. Therefore, the slowdown in the growth of real economic activity and the elevated level of inflation remain the main sources of risk to financial stability, which, in addition to the already existing challenges faced by numerous production activities, has led to increased credit risk, which could lead to a deterioration in the quality of the credit portfolio in the BH banking sector in the coming period.

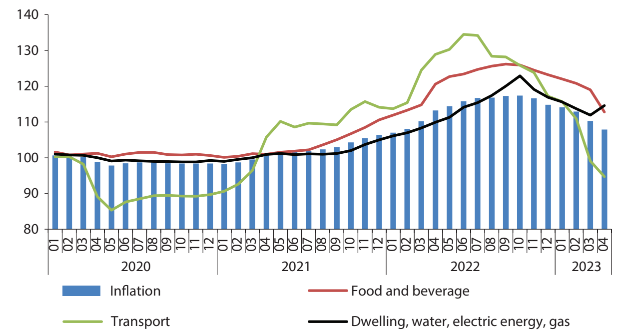
Graph 2.2: GDP, Exports of Goods and Industrial Production (% of Annual Change)



Source: BHAS, CBBH

The increase in risks in the domestic macroeconomic environment was to the greatest extent caused by the strong growth of inflation, which was assessed as the most significant risk to the domestic economy in 2022. Average inflation in 2022 was 14%, which represents the highest recorded annual inflation since 2005, when inflation in BH has begun to be measured by the consumer price index. The rapid growth of consumer prices began already in the second half of 2021, and the double-digit inflation values that began to be recorded from March 2022 remained as such until the end of the year. Inflationary pressures in BH were dominantly influenced by consumer prices in the categories of food and transport, which reached the record values at the global level as well (Graph 2.3). The peak of growth was reached in October 2022, when the gradual slowdown of overall inflation begins, primarily under the influence of the reduction in crude oil prices that began in the third quarter on world markets. Electricity prices, which recorded enormous growth on the European market, as a result of the energy crisis caused by the war in Ukraine, in Bosnia and Herzegovina were limited by the measures of entity governments, which successfully amortised the risk of excessive growth in electricity prices for the economy, while electricity prices for the households did not grow in 2022. Until the end of 2023, it is expected that the increased level of inflation will remain as such, mostly due to the continued rise in food prices in 2023[7]. In addition, possible pressures to harmonise electricity prices on the domestic market with trends on the international market could result in further strengthening of inflationary pressures.

Graph 2.3: Consumer Price Index in BH (a Month of the Current Year Compared to the Same Month of the Previous Year)



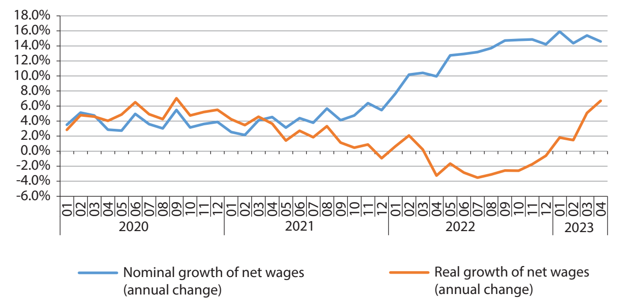
Source: BHAS

Although the positive trends from previous years continued in the labour market in 2022, reflected in a slight increase in the number of employed persons and a decrease in the unemployment rate, the real income of households decreased significantly, which in the coming period may spill over to the banking sector in the form of an increase and materialisation of credit risk in the household sector. The average number of total employed persons in 2022 was higher by 2.6% compared to the previous year, and the most pronounced average growth of employed persons was recorded in the Information and Communication area (10.5%), in which at the same time a significant increase in gross added values was reached. The highest growth in the average number of employed persons was recorded in the manufacturing industry, which also employs the largest number of persons, and the increase in the average number of employees of 2.5% was in line with the growth of real economic activity in this industry. The recovery of the labour market is also visible through the reduction of the unemployment rate, which according to data from the Labour Force Survey, according to the ILO methodology, amounted to 14.3% in the fourth quarter of 2022, while the average unemployment rate in 2022 was 15.4% and is lower by 2 percentage points compared to 2021. Although the labour market indicators have improved in 2022, they do not indicate an increase in the living standard of the households, taking into account that due to a strong inflationary shock, the real income of the households was declining for most of the year. It was only after nine consecutive months of decline that the real wages of the households started to recover

[7] According to the last round of CBBH projections from May 2023, the expected annual inflation for 2023 is 7.7%.

gradually under the influence of a stronger growth in nominal wages, with a simultaneous slowdown in the growth of inflation, which has been recorded since the beginning of 2023 (Graph 2.4). Although average wages are expected to continue to grow until the end of 2023, as well as a decrease in unemployment, the risks from the labour market have not been significantly mitigated. Unfavourable age structure of the population, long-term youth unemployment and negative demographic trends continue to be the main structural problems in the labour market, which largely limits the potential for economic growth and development of BH.

Graph 2.4: Net Wages and Inflation



Source: BHAS

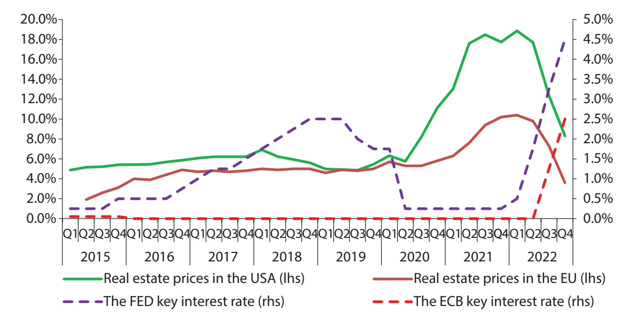
Risks related to the reduction of disposable income due to increased inflationary pressures were mitigated to a certain extent thanks to the increase in inflows based on remittances from abroad. In 2022, total inflows based on personal transfers amounted to KM 3.58 billion or 7.85% of GDP, which is KM 536.5 million or 17.6% more than in the previous year. Although the decline in disposable income has stopped in 2023, and inflationary pressures are expected to gradually ease by the end of the year, while a high perception of risk from the macroeconomic environment is still maintained. Due to the accumulated effects of the reduction in real disposable income from the previous year and the increased level of inflation that will be maintained in 2023, a significant reduction in personal consumption and a slowdown in economic growth in BH is expected, as well as an increase in risks in the banking sector in the form of a difficult ability to repay loans among the households with lower disposable income.

Text box 2: The real estate market

The geopolitical and economic challenges that the world faced during 2022 were inevitably reflected on the global real estate market. The real estate market recorded solid growth on both sides of the Atlantic even before 2020, i.e. before Covid-19, and bearing in mind the fundamentally different causes of the Covid-19 economic crisis compared to recorded economic crises before that, the real estate market not only remained immune to the economic turmoil, it has already recorded above-average growth in both the USA and the EU. Although there are many reasons for the growth of the real estate market during the pandemic, one of the dominant factors is the expansive monetary policy that in the period 2020-2021 marked the economic situation. Favourable lending conditions stimulated the increase in demand for real estate, and consequently the growth of real estate prices in times of economic uncertainty and an increase in investors risk aversion.

With the beginning of the war in Ukraine, which shook recovering world economy, the existing inflationary pressure further strengthened, so the leading central banks decided to take a turn in monetary policies, and to moderate inflation with restrictive measures (Graph TO2.1). With the increase in interest rates, the growth of real estate prices began to slow down in the larger global markets (USA, Germany, Italy), which hints at the possibility that a similar trend in the coming period may spread to other EU markets, countries of the region, and ultimately to the real estate market in BH.

Graph TB2.1: Annual Change of Real Estate Prices and Change of Key Interest Rates

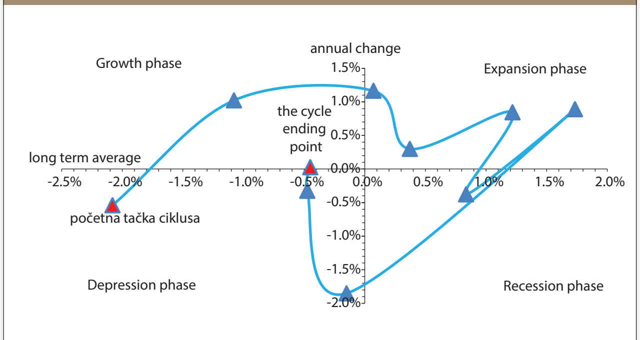


Source: ECB, FED, Trading Economics

In consideration of global trends, it is necessary to observe the developments on the real estate market in BH, where certain signals of increased risk for the next period can be noticed, despite the fact that the real estate market in most of its segments is still in the growth phase.

Before reviewing the correlatio between supply and demand, and the real estate price index, it is necessary to give an overview of the real estate category as part of BH GDP. As of 2020, the real estate business category does not contribute positively to the GDP trend, recording two consecutive years of negative growth (2020 and 2021), while in 2022, stagnation (0.0%) was recorded in real values. Graph TO2.2 shows the cycle of the real value trends of this GDP category in the period 2013 - 2022 with annual changes and changes in relation to the long-term average (average in the observed period). The Graph clearly illustrates that the annual negative change in the period 2020-2021 was so significant that it moved real estate sales values below the long-term average. In accordance with this trend, it is not surprising that as of 2022, the real estate business category amounted to only 4.1% of nominal GDP, which is the historically lowest share of this category in the GDP structure.

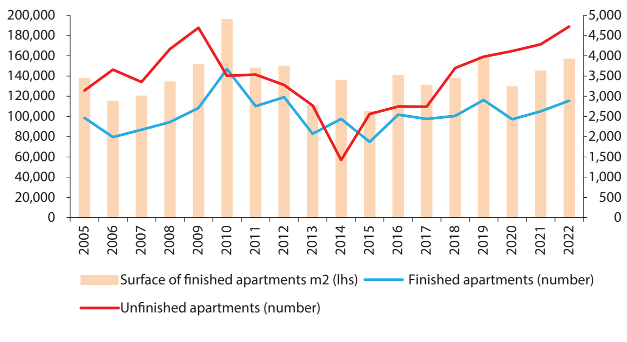
Graph TB2.2: The Trend of Change of GDP Category "Real Estate Business" at the Annual Level and Compared to Years Long Average Level (10 Years)



Source: BHAS, CBBH

On the other hand, other available data related to the real estate market (residential construction, number of new dwellings sold and the house price index), which are significantly affected by inflation, give a different and much more positive picture of the real estate market. Namely, the supply of real estate in 2022 continued to grow on an annual basis, although the pre-pandemic level of 2019 has not yet been reached in terms of the number of completed dwellings and their surface area (Graph TO2.3). At the same time, the number of issued building permits for residential buildings increased (6.7% on an annual basis), and so did the number ofuncompleted dwellings, that reached a historically record value, which all confirms the fact that there is still no risk on the side of the supply of new real estate.

Graph TB2.3: Statistical Indicators in the Residential Building Field

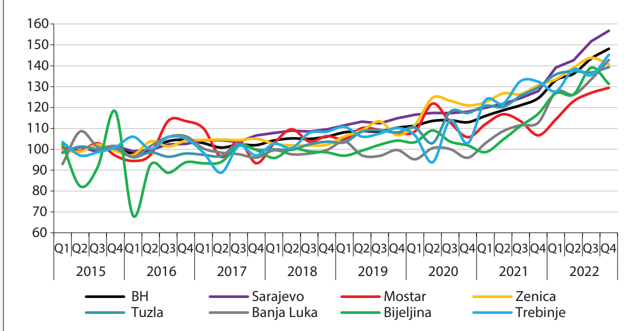


Source: BHAS

As for the volume of real estate sales, the trends differ between new dwellings sold and existing housing stock. Thus, after significant growth in 2021, the number of new dwellings sold in 2022 decreased by 2.7%, while the sold useful floor area of new dwellings decreased by 1.3%. On the other hand, the turnover volume ofexisting housing stock, measured by the surface area of sold residential space in a sample of seven BH cities for which data is available, recorded a growth of 16.8%, but even so it did not reach the 2019 level, when the largest volume of sales was registered. A smaller volume of sales of existing housing stock compared to 2021 was recorded only in City of Trebinje). Of the three Sarajevo Municipalities included in the analysis, a slightly smaller volume of sales was recorded only in the Municipality of Centar, but even so, the total turnover of real estate of old construction in the City of Sarajevo increased by 8.5% compared to 2021.

It was the City of Sarajevo that recorded the highest value of the real estate price index in 2022, with strong price growth in all three analysed Municipalities. At the same time, other cities/municipalities did not significantly lag behind in the positive trend, so for the first time since 2019, an increase in the prices of existing housing stock was recorded in all cities. (Graph TO2.4).

Graph TB2.4: Real Estate Price Index

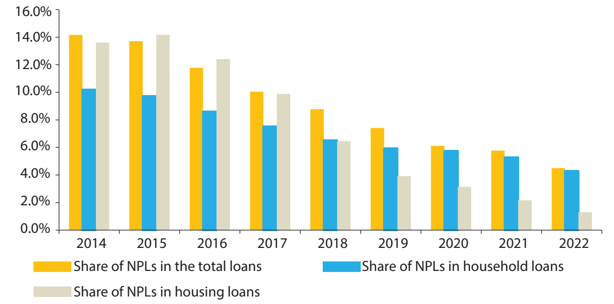


Source: CBBH

The average square metre price in new dwellings also increased sharply by even 33% compared to the 2021 average level. Thus, unlike the existing housing stock, where the intensity of price growth accelerates in each quarter, a slight slowdown was recorded in new dwellings in the last quarter of 2022, which could be the first sign of slowdown of real estate prices growth in BH market.

The data on the volume of purchase and sale, and especially the data on real estate prices, lead to the conclusion that real estate market has continuously appeared to be quite resilient to most challenges, which BH economy faces, in a wider context. Along with high demand for real properties, additional impulse for the price growth in 2022 came from inflation trends through increase in construction sights and construction materials prices. A strong demand for real estate is also a result of two factors, those being the favourable financing terms in the market on one hand, and perception of real estate as safe investment asset on the other hand. The amount of non-performing loans in this area is still among the lowest in the entire banking sector portfolio (Graph TO2.5).

Graph TB2.5: Share of NPLs in the Total Loans in Selected Sectors

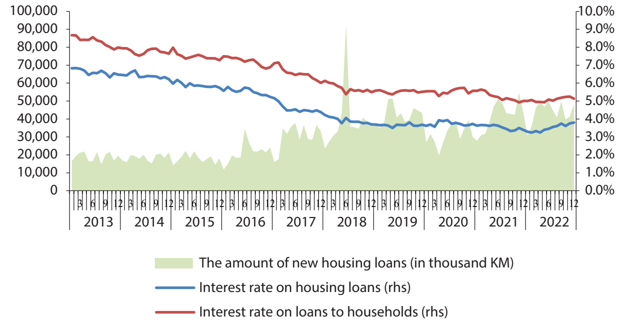


Source: FBA, ABRS, CBBH

Since 2016, the amount of new housing loans has been increasing continuously (with the exception of 2020, as a consequence of the Covid-19 crisis), the nominal amount of new housing loans in 2022 reaching its record high at KM 524 million, accounting for 14.7% of the total loans to households and 7.5% of the total loans of BH banking sector. In 2022, the growth of new housing loans was 4.4%, which is a lower growth rate compared to one from 2021, when a high two digit growth rate was reached, mainly as a result of the low base value from the already mentioned year of crisis 2020. Therefore, the lower growth rate recorded in 2022 does not represent a change of the trend, but the adjustment of growth rate with the long-term average value. The first data for 2023 confirm such trend having in mind that the growth of housing loans in the first quarter of 2023 was 18.7% at the annual level. Housing loans have been extended for years at declining interest rates, the average interest rate for this category of loans in 2022 being 3.5%, which is much lower than the average interest rate on the total loans to households (5.1%).

However, based on the detailed interest rate trend by months, the signs of negative trends from international financial markets spilling over are observed, which might be a key risk for the future trends in this sector. The housing loans costs in BH started to increase slowly in the second half of 2022. Therefore, the average interest rate on housing loans in the second half of 2022 amounted to 3.68%, which is higher by 35 basis points compared to the first six months of 2022. Furthermore, the average interest rate on housing loans in December 2022 amounted to 3.8%, which is the highest interest rate on this loan category since the beginning of 2020 (Graph TO2.6). The recorded interest rate increase has not yet affected the amount of new loans, having in mind that the time period was short for the effects of interest rates to be materialized, but it certainly represents a potential risk in the future period.

Graph TB2.6: Terms of Financing in Real Estate Market



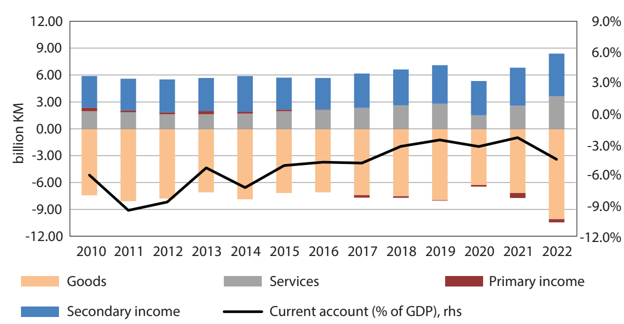
Source: CBBH

The key issue in the period ahead is the level to which the interest rate growth is possible for housing loans, without a negative effect on the amount of loans and real estate market in BH. In the period ahead, interest rates will mainly depend on the inflation level and decisions of international monetary institutions in relation to inflation pressure. If global inflation continues to increase, new restrictive measures of monetary institutions are expected, which will additionally increase interest rates on the global market, and consequently also in BH. The realisation of such scenario would certainly lead to a decline of demand forreal estate, having in mind that housing loans represents the key source for financing of real estate purchases by households. At the same time, high inflation will additionally increase the construction costs, maintaining real estate prices at a high level, which is not followed by growth of disposable income. Yet, although possible, such scenario is still less likely. According to current macroeconomic forecasts, BH economy will record a low, but positive real growth of GDP with mitigated inflation pressures in medium term period. In such macroeconomic environment, the continuing favourable trends in real estate market reflected in the growth of purchase and sale volume and real estate prices are quite likely.

Adverse macroeconomic trends during 2022 affected the deterioration of BH balance of payments position. Current account deficit in the end of 2022 amounted to KM 2.04 billion (4.5% of GDP) which is higher by KM 1.12 billion, i.e. 2.1 percentage points in relation to GDP compared to the previous year. The most significant impact on current account deficit was that of goods deficit deepening, which was largely impacted by the price growth in 2022, and a stronger import growth compared to the growth of exports of goods. In 2022, goods deficit amounted to KM 10.1 billion or 22.1% of GDP, which is a higher goods deficit by 3.8 percentage points in relation to GDP, compared to the previous year. At the same time, continuing positive trends in key surplus categories, mainly services and secondary income were recorded. In 2022, the record growth of inflow was seen based on foreign tourists' arrivals (64.9%)

and transport services (36.3%), which mainly influenced the total increase of net inflows based on services, which were higher by 41% compared to the previous year. In addition, a growth of inflows in secondary income account by 12.5% was seen compared to the previous year, which was mainly affected by the earlier mentioned growth of inflow on the basis of remittances from foreign countries (Graph 2.5).

Graph 2.5: Structure of BH Current Account



Source: BHAS,CBBH

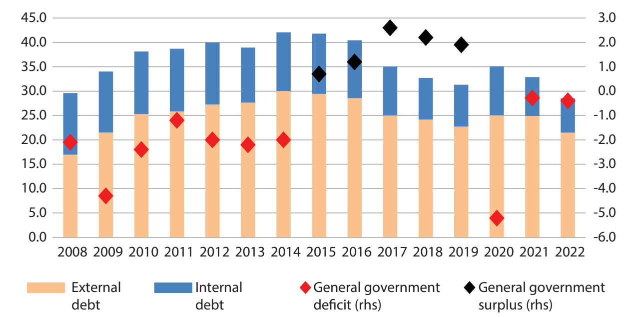
From the financial stability view, the structure of net inflows in financial account is particularly important, still significantly exceeding the recorded current account deficit. With the recorded growth of inflows on the basis of foreign direct investment, which amounted to KM 1.15 billion in 2022, a significant increase of private sector borrowing in foreign countries in the form of trade loans and advance payments was recorded this year, taking into account that a high level of international commodity trading was achieved. On the other hand, net borrowing of government sector in 2022 decreased significantly, as the amount of serviced liabilities towards non-residents was higher than funds withdrawn from foreign creditors so, net inflows on the basis of other investments were lower than in the previous year.

In the period ahead, current account deficit could remain deepened, as, according to the CBBH projections, a strong contraction of foreign trade is expected due to decreased export demand of the main BH foreign trade partners in 2023. In such circumstances, net exports will have a higher negative contribution to economic activity, which, with a similar assumed trend of the main surplus categories (services and secondary income) could make pressure on current account deficit.

General government sector saw a record high growth of revenues in 2022, mainly affected by the growth of the general price level and a stronger economic activity in the first half of the year. However, due to the strengthening of inflationary pressures, governments were forced to increase government spending, through the increase of public sector wages and pensions, and providing fiscal support measures for the poorest groups of households, which led to a slight growth of fiscal deficit at BH level in 2022. At the same time, large investment projects and significant withdrawal of funds from foreign creditors under concession terms were not realised, the total BH public debt in per cents of GDP having decreased.

General government sector collected a record high amount of revenues of KM 18.21 billion, while the recorded revenue growth of KM 2.16 billion (13.4%) and increase of fiscal possibilities mainly resulted from a strong inflation growth and broadening of tax base in 2022. A prevailing impact on the increase of the budget income side came from the increase of tax based revenues, which in 2022 increased by KM 1.43 billion (16.7%). Indirect tax revenues in the end of 2022 reached the record high amount of KM 7.88 billion, representing a growth of KM 939.1 million or 13.5% compared to the same period of the previous year. With the growth of indirect tax revenues, the growth of direct tax revenues was seen as well, and also the growth of other revenue categories. At the same time, the total expenses of BH general government sector also increased strongly in the amount of KM 2.01 billion (13.6%), amounting to KM 16.8 billion in the end of 2022. Increase of current expenses resulted from fiscal measures of support to households in coping with inflation, and increase of pensions and wages in public sector, so the two largest items of budget expenses, the social help-based expenses and the expenses based on remunerations to employees, recorded strong increases of 13.7% and 12.6% respectively compared to the previous year. Investments in fixed assets (net procurement of non-financial assets) amounted to KM 1.59 billion, so BH general government sector in the end of 2022 recorded a fiscal deficit in the amount of KM 182.7 million or 0.4% of GDP (Graph 2.6).

Graph 2.6: BH Public Debt and General Government Balance (% of GDP)



Source: MFT BH, BHAS, CBBH

The total BH public debt in the end of 2022 amounted to KM 13 billion or 28.5% of GDP. Compared to the previous year, public debt increased slowly by 1.2%, resulting from a slight increase of BH foreign debt in the amount of only KM 64.7 million (0.7%), while the internal debt increased by KM 86.5 million (2.8%). In 2022, there was no significant increase of capital investment, as government activities were mainly focused on mitigating the consequences of inflation, which is the reason why there was no significant foreign debt increase. Due to the growth of current spending, governments suspended larger engagement of funds for infrastructure projects and projects in BH electric energy sector. In the local market, in 2022, the two BH Entities issued the total of KM 672.7 million of debt securities, which is almost twice higher than the value of issues compared to the previous year[8]. The same as in earlier years, the Entity governments remained the main drivers of activities in the local capital markets, so the increase of primary market of public debt was reflected in a significant increase of trading on BH stock exchanges, which was doubled in 2022 compared to the previous year.

Banking sector stayed one of the largest creditors of the government sector, however, the total banking sector exposure to all the levels of governments in 2022 increased on the basis of purchases of securities, while loans to governments slightly decreased compared to the previous year. Exposure to government securities in 2022 increased by KM 136.1 million representing 5.2% of the total assets, with commercial loans of banks extended to government sector decreasing during the last year and accounting for 2.6% of the total assets of BH banking sector (Table 2.1).

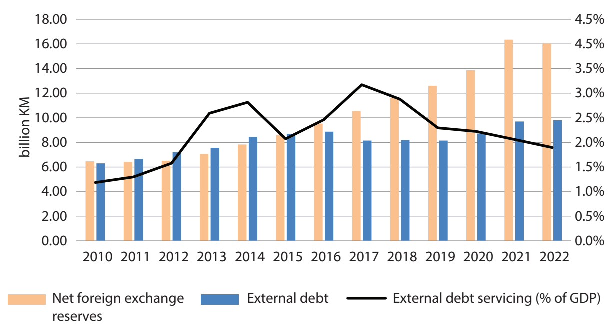
Table 2.1: Commercial Banks' Claims on Government Sector (KM million)

Claims	2017	2018	2019	2020	2021	2022
Central government	**0,1**	**0,1**	**0,1**	**11,6**	**16,1**	**17,7**
Loans	0,0	0,0	0,0	11,6	16,1	17,7
Securities	0,1	0,1	0,1	0,0	0,0	0,0
Entity level government	**1.624,8**	**1.735,3**	**2.006,8**	**2.439,4**	**2.474,8**	**2.554,7**
Loans	410,0	517,3	580,1	605,7	584,6	517,8
Securities	1.214,9	1.218,0	1.426,6	1.833,7	1.890,1	2.036,9
Canton government	**206,2**	**160,5**	**127,2**	**90,0**	**134,8**	**146,0**
Loans	200,2	154,5	114,5	80,9	125,7	146,0
Securities	6,0	6,0	12,7	9,1	9,1	0,0
Municipality government	**293,1**	**295,6**	**308,7**	**350,7**	**332,1**	**340,3**
Loans	291,0	285,7	297,7	341,0	323,8	333,5
Securities	2,1	9,9	11,0	9,8	8,4	6,8
TOTAL	**2.127,2**	**2.194,5**	**2.445,6**	**2.891,7**	**2.957,8**	**3.058,8**
(% of total assets)	7,2	6,8	7,0	8,2	7,8	7,8
Loans	901,2	957,5	992,3	1.039,2	1.050,2	1.015,1
(% of total assets)	3,0	3,0	2,8	2,9	2,8	2,6
Securities	1.223,0	1.234,0	1.450,4	1.852,6	1.907,6	2.043,7
(% of total assets)	4,1	3,8	4,1	5,2	5,0	5,2

Source: CBBH

In 2022, the public debt share in GDP continued to decrease, which places BH, according to Maastricht criteria (although they are not directly applied and the data are not necessarily fully comparable) into the group of countries with moderate debt level, which is why risks to public finance stability are assessed as moderate in medium term. In the end of 2022, the public debt share in GDP amounted to 28.5%, having decreased by 4.4 percentage points compared to the previous year. A considerable decrease of public debt ratio to GDP resulted from a significantly higher recorded nominal growth of GDP with the simultaneous slow growth of public debt compared to the previous period. The absence of a significant withdrawal of funds from foreign creditors, and a higher amount of foreign debt serviced compared to the previous year resulted in a decrease of net debt of government sector (KM -244.6 million)[9], and a decrease of the foreign exchange reserves on that basis. In the end of 2022, the CBBH foreign exchange reserves amounted to KM 16.06 billion, having decreased by KM 282.5 million (1.72%) compared to the same period of the previous year. Due to a slight increase of share of debt with variable interest rate in 2022, a slight growth of foreign debt servicing costs was recorded. Although repayment and costs of foreign debt servicing in 2022 were slightly higher compared to the previous year, due to a strong GDP growth, foreign debt servicing in per cents of GDP decreased (Graph 2.7).

Graph 2.7: Foreign Exchange Reserves and External Debt



Source: BHAS, CBBH, MFT BH

International rating agencies kept the credit rating of BH in 2022 at the same level as in the previous year, „B" with stable outlook according to the assessment of credit agency Standard and Poor's (S&P), and „B3" with stable outlook according to the assessment of international rating agency Moody's Investor Service. In February 2023, agency S&P increased the outlook of BH credit rating from stable to positive. A positive impulse to increase of credit rating outlook came from the candidate status for the EU membership, which BH gained in December 2022, and timely establishment of authorities at the state level. According to analysts' assessment, BH economy

[8] *The amount includes the values of bonds and treasury bills issues of FBH and RS in the local capital markets.*

[9] *Source: CBBH, BH balance of payments, Q4 2022*

has proved to be rather resilient to external shocks which led to sharp increase of prices, and there is a possibility that BH credit rating may be increased during the next year if fiscal situation remains stable, and external imbalances moderate, despite a decreased demand by key trade partners. On the other hand, credit rating may be decreased in case of stronger political confrontations, particularly if they lead to possible negative implications in respect of foreign debt servicing.

Fiscal stability indicators in 2022 point out a moderate level of risk exposure, as all risk indicators in 2022 are in the safe area according to the defined reference levels (table 2.2). Despite the growth of the overall macroeconomic risks, in 2022, most fiscal stability indicators saw improved values, mainly resulting from a significant growth of nominal GDP. So, public debt ratio in per cents of GDP decreased considerably, although both external and internal debt increased slightly in 2022. The financing needs in 2022 were somewhat higher compared to the previous year due to the increase of short-term government debt and higher recorded budget deficit of BH general government. owever, this fiscal stability indicator also improved compared to the previous year as it is presented in per cents of GDP. Implicit interest rate on government sector debt, which is decreased by GDP deflator and growth rate of real GDP in 2022 is deep in the negative area due to a strong inflation, therefore, public finance risk exposure was lower than in the previous year on this basis as well. Due to a slight decrease of debt denominated in currencies other than euro, currency risk exposure also decreased. On the other hand, average public debt maturity was slightly lower than in the previous year, thus the refinancing risk slightly increased compared to the previous year. As there were no significant withdrawals of long-term funds from international creditors in 2022, an increase of short-term foreign debt and decrease of the foreign exchange reserves was recorded, while the short-term debt amount to the foreign exchange reserves ratio increased.

Table 2.2: Indicators of Fiscal Sustainability Risk

Indicator	Safe area	Benchmark level	Level in BH	Changes compared to the previous year
r - g[1]	<	1.1	-5.71	0.00
Public debt of general Government sector (% of GDP)	<	42.8%	28.5%	-4.4%
Cyclically adjusted primary balance (% of potential GDP)[2]	>	-0.50%	1.3%	0.7%
Financing needs (% of GDP)	<	20.6%	3.8%	-0.3%
Share of short-term debt in the total debt, remaining maturity	<	44.0%	11.9%	0.2%
Debt denominated in foreign currency (non-euro)[3]	<	40.3%	25.3%	-2.2%
Average maturity of public debt (years)	>	2.3	6.3	-0.38
Short-term foreign public debt (% of foreign currency reserves),remaining maturity	<	61.8%	4.5%	0.1%

Source: CBBH, MFT of BH, BHAS, BH Fiscal Council, IMF, Ministries of Finance of FBH and RS
Note:
[1] - r - Implicit interest rate on government sector debt minus the GDP deflator (moving average for five years); g - real GDP growth rate (moving average for five years)
[2] For 2022, the IMF projection from April 2023 was used.
[3] Calculation of the public debt denominated in foreign currency does not include a part of the public debt denominated in euro due to the fixed rate of the local currency and euro.

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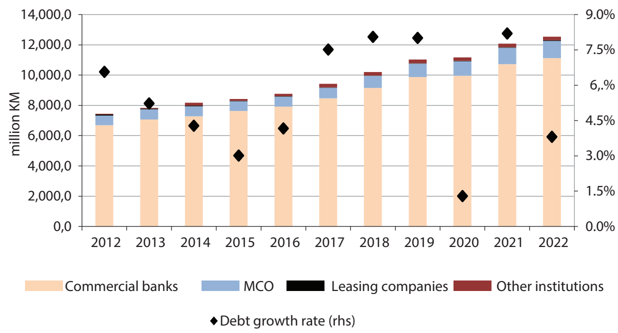
HOUSEHOLDS

3. HOUSEHOLDS

The recovery of the economic activity in the first half of 2022 increased the households' propensity to spend, which, along with still favourable financing terms, led to an increase in demand for loans and growth of household debt. However, strong inflationary pressures and decrease of household disposable income, as well as a slight increase in interest rates and tightening credit standards contributed to a decrease of propensity to spend and demand for loans, slowing down credit activity in the second half of the year. The downward trend of non-performing loans in the total loans of household sector continued, however, some households faced difficulties in regular servicing of their obligations, evident in a significant increase of loans at the credit risk level 2. The increased risk of borrowing at variable interest rates, amidst a strong rise in interest rates in foreign markets resulted in a continuation of the trend of reduced household borrowing at variable interest rates or fixation periods up to one year. Household deposits declined significantly in the first and second quarters of 2022, as funds were withdrawn from banks, following the beginning of the war in Ukraine and issues faced by the Russian Sberbank group. On an annual basis, there was a slight decline of the total household deposits, although funds in transaction accounts and short-term deposits continued to increase. In the coming period, an increase in credit risk in the household sector is expected due to the anticipated continuation of interest rate increases and a decrease in disposable income due to inflationary pressures expected in the first half of 2023, which may bring about a reduced ability to regularly service household obligations.

The increase in indebtedness of the household sector was continued in 2022, stimulated by the increase in consumption in this sector due to the recovery of economic activity in the first half of the year and due to the still favourable terms of financing. The total indebtedness of households amounted to KM 12.5 billion at the end of 2022, according to the data from the CRC, and it increased by 3.8% compared to the previous year. Traditionally, the largest part of household indebtedness refers to indebtedness for loans with commercial banks, which recorded a growth of 3.8% in 2022 compared to the previous year. Household indebtedness with these financial institutions accounted for 88.7% of the total indebtedness, continously making the biggest contribution to the growth of the total indebtedness of households. Household indebtedness with microcredit organisations has also increased, and, according to the data from the CRC, it is 3.8% higher compared to the previous year. The indebtedness of households to leasing companies in 2022 is also somewhat higher, however these institutions have a negligible share of only 0.4% in the total indebtedness of households (Graph 3.1)

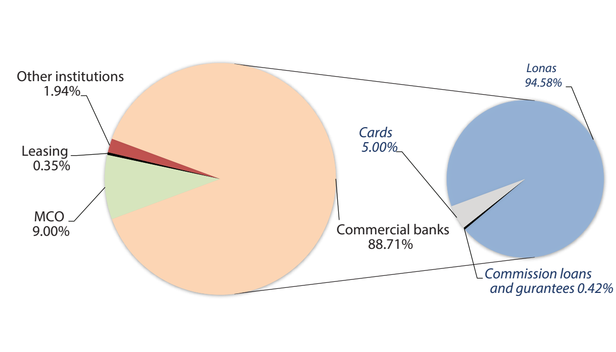
Graph 3.1: Household Debt towards Financial Institutions



Source: CRC, CBBH

The structure of household indebtedness with commercial banks by type of indebtedness did not change significantly in the past period, wherein in 2022 an increase was registered in all types of receivables, except those based on cards. The growth of total receivables from households mostly resulted from the increase in indebtedness of households for classic loans from commercial banks. Compared to the previous year, these receivables recorded an increase of 6.2%, thus continuing the long-standing growth trend. The share of traditional loans in the total indebtedness of households is still by far the largest and amounts to 94,6%, which is a slight increase compared to the previous year (Graph 3.2).

Graph 3.2: Household Debt by Institutions and Type of Debt, 2022



Source: CRC, CBBH

In 2022, a slight decrease in the active number of payment cards was recorded. Also, a significant decrease in the total used part of the limit per card and the average household debt per payment card was recorded. The number of recorded payment cards in 2022 was slightly lower (1.7%), compared to the previous year, which is mostly a consequence of a decrease in the number of debit cards with an allowed overdraft, that is, an approved limit. Although the approved credit card limit decreased slightly (1.5%), the approved limits for debit and deferred payment cards increased (by 4% and 4.4% respectively), so the total amount of the approved limits for all active cards increased by 2.7%. The used part of the allowed overdraft amount for all active cards decreased by 11.8% compared to the previous year (Table 3.1)[10]. Years long downward trend of the average household debt based on credit cards continued in 2022, when the average debt per credit card decreased by 24.1%, as this form of borrowing bears high interest rates, which increased additionally during 2022 and the first four months of 2023, while the average debt per deferred payment card decreased by 21.6%. The debt per debit card remained at roughly the same level. Considering that the limit for debit cards is most often determined by the level of average monthly income, the used part of the limit per card can be used as an indicator of the households' consumption in relation to the level of their income. The average debt on debit cards at the end of 2022 was KM 516, which represents 46% of the average net salary in 2022.

were no restrictions on the duration and amount of non-purpose and replacement loans, these loans were largely used to finance housing needs due to more favourable conditions, i.e. the fact that they did not have to be collateralised. General consumption loans continued to increase in 2022, at a rate of 5.5%. The growth of general consumption loans was expected, with a high number of households financing their current life needs by means of such loans, approved card overdrafts, non-purpose or consumer loans, which was particularly evident in 2022, due to a decrease of household disposable income caused by high inflation. Although the household debt based on loans for business activities increased by 6.7% in 2022 compared to the previous year, it still contributed very modestly to the total household debt.

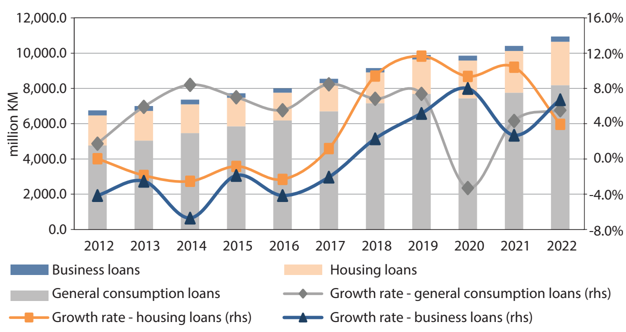
Table 3.1: Claims on Households, Cards in KM

	Number of active cards		Approved amount		Used amount		Debt per card	
	2022	Annual change	2022	Annual change	2022	Annual change	2022	Annual change
Debit cards	685,004	-2.6%	896,641,310	4.0%	353,479,447	-2.4%	516	0.2%
Credit cards	259,968	-2.1%	351,714,181	-1.5%	163,422,912	-25.7%	629	-24.1%
Deferred payment cards	152,116	3.2%	170,036,126	4.4%	38,859,181	-19.1%	255	-21.6%
TOTAL	**1,097,088**	**-1.7%**	**1,418,391,617**	**2.7%**	**555,761,540**	**-11.8%**	**507**	**-10.3%**

Source: CRC

A growth in indebtedness was registered for all types of loans in 2022. As in previous years, the structure of receivables from households is dominated by loans for general consumption, which also include receivables from all types of cards. In addition, housing construction loans continued to grow, at a lower rate than in 2021. The structure of loans to households remained almost the same compared to the previous year, general consumption loans (74.8%) having the largest share in the total household loans, followed by housing loans (22.4%), while the remaining part applied to business loans (2.8%). In 2022, housing loans increased by 3.9% compared to the previous year, while their share in the total household loans remained at almost the same level as in 2021. The described trends in real estate market (see *Text box 2*) impacted the growth of demand for housing loans during the several recent years. In addition, general consumption loans have recently been used to a much lesser extent to finance housing needs, resulting in increased demand for housing loans. Namely, in previous years, when there

Graph 3.3: Loans to Households by Purpose and Credit Growth



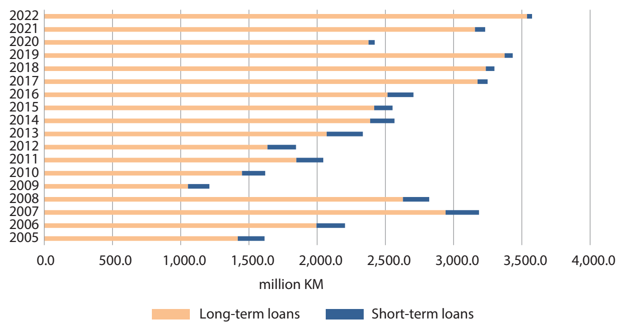
Source: FBA and BARS, CBBH

According to the CBBH data, KM 3.58 billion of newly approved loans to households was recorded in 2022, representing an increase of 10.6% compared to the previous year. However, previously approved rescheduled loans, as well as approved replacement loans, are kept in the records under newly approved loans. In 2022, the amount of approved or rescheduled household loans was higher by KM 343.9 million compared to 2021, with the increase recorded only in the

10 *During the analysis, debit cards without an approved overdraft amount and without household debt, which were registered by banks in the CRC, were not taken into account.*

segment of long-term loans (maturities longer than one year), which can be related with the growth of housing loans (Graph 3.4). The strongest lending was recorded in the second quarter, due to an increased demand for general purpose loans and housing loans. Yet, strong inflationary pressures and decrease in household disposable income, as well as a slow growth of interest rates and tightening of lending, which had started in the third quarter of 2022, impacted a decrease of propensity to spend and the demand for loans, which slowed down lending in the second half of the year. In such circumstances, the growth of risks in household sector is also expected. Although a considerable increase of debt repayment amount is initially not expected, the decrease in household disposable income may result in decreased capability of regular servicing of household liabilities, and consequently, increase of credit risk.

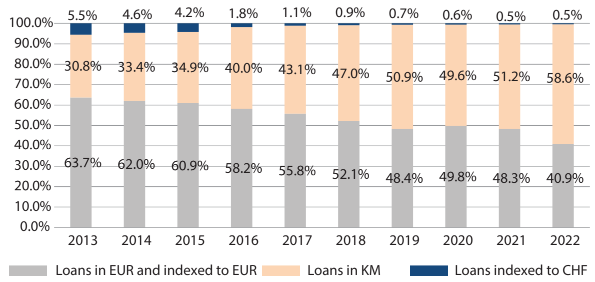
Graph 3.4: New Loans to Households



Source: CBBH

In the currency structure of household loans, the share of loans with a currency clause in euro in total loans continued to decrease gradually. Taking into account the existing regime of the currency board in BH and the determination to maintain it in the future period, liabilities indexed to euro do not pose a currency risk. In recent years, there has been a noticeable trend of a decrease of the share of loans in foreign currency and indexed loans in total loans to households, which continued in 2022. According to the data from the CRC, loans in EUR and loans with EUR currency indexation, recorded a decrease of 10% in 2022, while loans in KM increased by 21.7%. The share of loans to households in foreign currencies and with currency indexation decreased at the end of 2022 compared to the previous year (Graph 3.5).

Graph 3.5: Currency Structure of Loans to Households



Source: CRC

Growth of both short-term loans and long-term loans in all maturity buckets was recorded in 2022. Household debt in EUR and with a currency clause in EUR decreased in all maturity buckets, while debt in KM increased significantly. Analysing the maturity structure, households are most indebted in loans with a contractual maturity of over ten years, followed by loans with a maturity of five to ten years (Table 3.2).

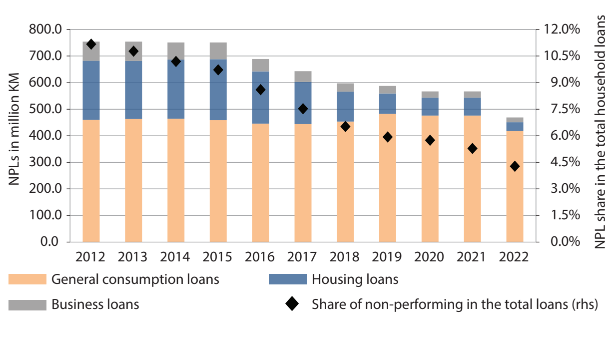
Table 3.2: Loans to Households, Maturity and Currency Structure

Maturity/Currency	Remaining debt and due uncollected principal, thousand KM							
	KM		Foreign currency loans and indexed loans				TOTAL	
			EUR		Other loans in foreign currency			
	2022	Annual change	2022	Annual change	2022	Annual change	2022	Annual change
Up to 1 year	60,748	6.0%	3,962	-17.2%	0	0.0%	64,710	4.2%
1 - 3 years	215,130	8.3%	46,419	-22.0%	3.538	4.2%	265,087	1.4%
3 - 5 years	528,444	5.9%	89,091	-12.3%	27.258	1.0%	644,792	2.8%
5 - 10 years	2,277,964	15.8%	779,464	-16.9%	15.369	-6.7%	3,072,797	5.1%
Over 10 years	3,085,311	31.5%	3,387,948	-8.0%	1.782	-25.2%	6,475,041	7.3%
TOTAL	6,167,598	21.7%	4,306,884	-3.6%	47.946	-22.3%	10,522,428	6.2%

Source: CRC

The level of non-performing loans in the total loans of household sector continued to decrease in 2022, marking the tenth consecutive year of decline. The share of non-performing loans in total loans decreased by 100 bp at the end of 2022 compared to the previous year, reaching 4.3%. In 2022, there was an increase in loans extended to households, contributing to the improvement of the non-performing to total loans indicator, alongside a decrease in the NPL amount (Graph 3.6). The improvement of household sector's loan portfolio quality in previous years was a result of activities carried out by banks, such as accounting and permanent write-off of non-performing loans and more efficient credit risk management. Analysing the trends in non-performing loans by purpose, non-performing loans for general consumption at the end of 2022 decreased by 12.5% compared to the end of the previous year, non-performing loans for housing consctruction over the observed period were lower by 35.4%, while the non-performing loans for business activities decreased by 14.9%. Although the default rate in the household sector was lower than in the previous year, a significant increase in loans categorised as credit risk level 2 was recorded, in 2022, in the amount of KM 176.4 million or 25%. This indicates delays in repayment of certain loans and an increase in credit risk, particularly in case of household loans intended for general consumption.

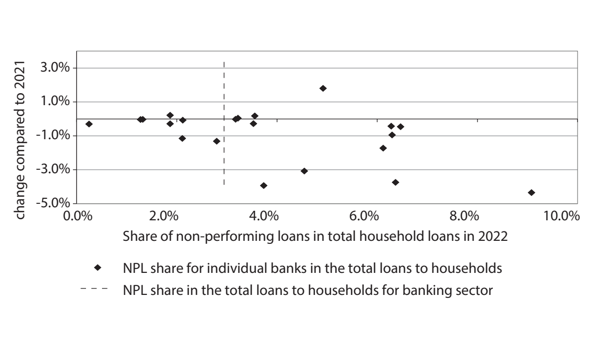
Graph 3.6: Non-performing Loans in Household Sector by Categories



Source: FBA, BARS, CBBH

Given the quality of the credit portfolio in the household segment by individual banks, it can be observed that the share of non-performing loans in total household loans decreased in 2022 for most banks in the sector, including banks with the highest concentration of non-performing loans (Graph 3.7). However, some banks recorded an increase in non-performing loans in the general consumption category, as a result of the materialization of previously accumulated credit risk. The increase in the ECB reference interest rate influenced the rise of EURIBOR rate which is an integral part of the interest rate on loans contracted with variable interest rates, however, banks did not consistently adjust interest rates in the existing contracts, so there was no significant growth of interest rates in BH banking sector in 2022. Yet, interest rate growth is inevitable, as it continued in 2023, increasing the risk of households' inability to service their obligations, so the quality of household sector loan portfolio is expected to deteriorate in the period ahead, especially considering the decrease in the disposable income of households.

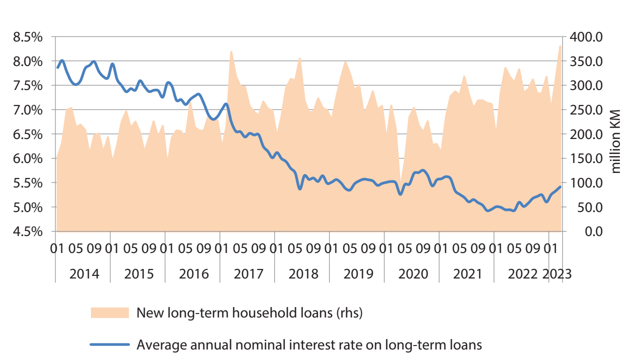
Graph 3.7: Non-performing in the Total Loans to Households. by Banks



Source: FBA, BARS, CBBH

The financing conditions for the households remained favourable in 2022, with interest rates on loans to households decreasing slightly during the first half of the year, while a gradual increase in interest rates began in the second half of the year. The interest rates increase in the second part of the year was not reflected in the growth of the average annual nominal interest rate on long-term loans in 2022, which amounted to 5.06% and was lower by 16 basis points compared to the previous year. Interest rates continued to increase moderately in 2023, the average weighted interest rate on long term loans increasing by 30 basis points in April 2023 compared to the end of 2022 (Graph 3.8).

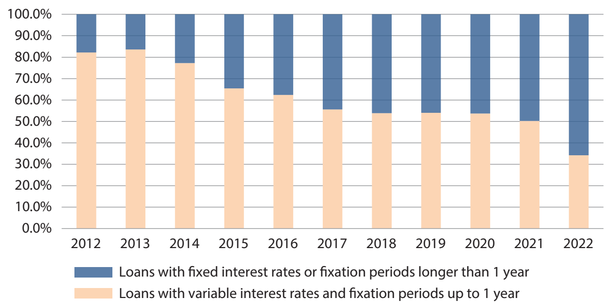
Graph 3.8: New Long-term Loans and Average Weighted Interest Rates



Source: CBBH

The interest rate risk of borrowers in the household sector was partially mitigated by the increased volume of lending at a fixed interest rate or by extending the interest rate fixation period. Also, when rescheduling previously approved loans, new contracts are often concluded with fixed interest rates. The trend of reducing the share of loans with a variable interest rate or a fixation period of up to one year in newly approved household loans continued in 2022, but it was much stronger than in previous years, due to a strong growth of interest rates on international markets. In 2022, these loans accounted for 34.3% of the total newly approved loans to households, which is lower by 15.9 percentage points compared to the end of 2021 (Graph 3.9). The same trend was continued in the first four months of 2023 and the share of loans with variable interest rates or fixation periods up to one year in newly approved loans to households decreased to 15.1%.

Graph 3.9: New Loans according to the Interest Rate Fixation Period

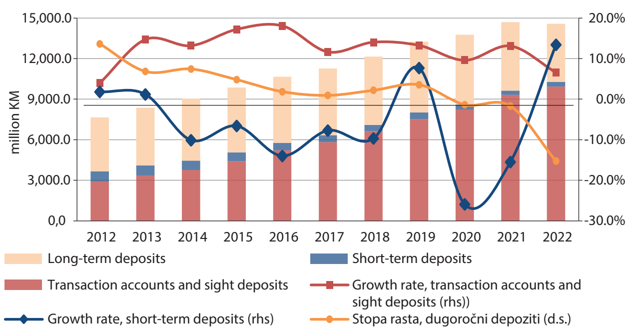


Source: CBBH

In 2022, a slow decline of the total household deposits was recorded, due to the shock of a strong withdrawal of deposits from the first quarter. During the year, the growth trend of funds in transaction accounts and short-term deposits continued, while long-term household deposits declined. Household deposits declined considerably in mid first and the beginning of the second quarter of 2022, when funds were withdrawn from banks, following the outbreak of war in Ukraine and the problems faced by the Russian group Sberbank. The largest withdrawal of household deposits from the banking system was recorded in the end of February and during March 2022, when household deposits decreased by KM 963.6 million. In the observed period, a significant decline of all types of household deposits was recorded (transaction accounts, sight deposits, short-term and long-term deposits). As early as in April, the level of household deposits stabilised, with their gradual growth starting in June, and continuing until the end of the year. Household deposits returned to the end-of-2021 level as early as in the first quarter of 2023, amounting to KM 15 billion at the end of the first quarter.

Households were considerably less inclined to enter into new longer-term deposit contracts, partly due to the growth of inflation which marked the year 2022 and its impact on the decrease of the disposable income, and also due to the absence of a strong growth of deposit interest rates (Graph 3.10).

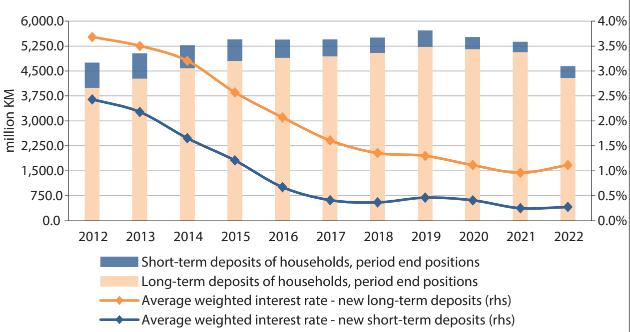
Graph 3.10: Household Deposits by Maturity



Source: CBBH

Interest rates on household deposits, which have been at extremely low levels for the last six years, recorded a slight increase for the first time. The average weighted interest rate on household deposits with a contractual maturity (term deposits) in 2022 was 0.91%. Average weighted interest rate on long-term deposits was 1.12% and it was higher by 16 basis points, while the interest rate on household short-term deposits was 0.28% and it was higher by 3 basis points compared to the end of the previous year (Graph 3.11). In 2023, a slow upward trend of deposit interest rates was continued.

Graph 3.11: Term-deposits of Households and Interest Rates on Deposits



Source: CBBH

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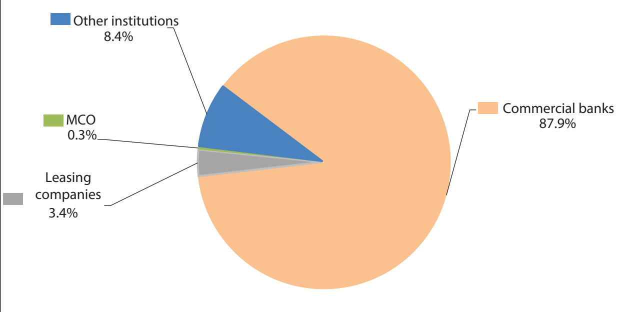
COMPANIES

4. COMPANIES

The total debt of the sector of non-financial companies to domestic financial intermediaries recorded a modest growth in 2022. In financing business activities, corporate sector mainly relied on bank lending support, the same as in previous years. At the same time, a growth of companies' foreign debt was recorded. A slow growth of average interest rates in the corporate sector in the second half of the year was recorded as a result of increasing macroeconomic risks and inflationary pressures. In order to decrease interest rate risk exposure, companies decided to mainly borrow at fixed interest rates. Despite increased risks from macroeconomic environment, the share of non-performing loans in total loans in corporate sector continued to decrease in 2022. However, higher costs of financing production processes due to the growth of producer prices and a growth of costs of servicing the liabilities arising from interest rate growth could increase credit risk coming from the non-financial companies' sector in medium –term period.

The total debt of the sector of non-financial companies to domestic financial intermediaries remained at almost the same level in 2022 as in the previous year. According to the data from the CRC, the total indebtedness of legal entities to all groups of financial intermediaries at the end of 2022 amounts to KM 13.9 billion, and is higher by modest 1.2% compared to the previous year. Measured as a share in GDP, the total indebtedness of companies to all the groups of financial intermediaries amountes to 30.6% of GDP. Traditionally, the indebtedness of the corporate sector on the domestic financial market mostly relates to indebtedness to the banking sector. The indebtedness on the capital market is still insignificant. The indebtedness of legal entities in the banking sector accounts for 87.9% of the total debt towards all financial intermediaries in BH (Graph 4.1).

Graph 4.1: Claims on Companies by the Type of Debt at 2022 End



Source: CRC, CBBH

According to the data from the CRC, the total debt of legal entities to banks in BH at the end of 2022 is KM 12.2 billion or 26.9% of GDP. The share of legal entities debt to microcredit organisations and leasing companies is still inconsiderable in the total debt.

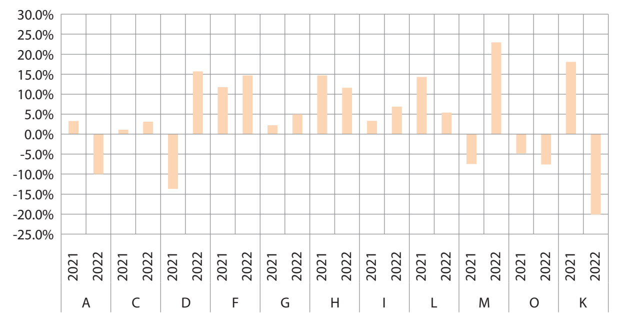
Significant credit activity was not recorded in the sector of non-financial companies during 2022. Commercial banks in BH granted KM 3.43 billion of new loans to the sector of non-financial private companies, which is an increase of 4.1% in 2022 compared to the previous year. Yet, on the basis of the value of new loans, there were no signs of lending intensification in the several recent years. A modest growth of lending in the sector of non-financial companies can be partly explained by the tightening of lending standards in granting loans to non-financial companies in the first three quarters of 2022. Lending was somewhat stronger in the segment of short-term loans of smaller amounts (up to EUR 0.25 million), and in the segment of long-term loans in the amounts of 0.25 to 1 million KM. Although financing of larger investment projects in the sector of non-financial companies was slightly higher in comparison to the previous year, the amount of this type of loans remained modest. Economic activity slowdown, which will be the strongest in 2023 according to the CBBH projections, with continuing increase of risks in the domestic macroeconomic environment, could result in additional slowdown of the already weak lending in corporate sector.

The total exposure of the banking sector to legal entities recorded a slight increase compared to the previous year, with the highest increase of debt observed in companies engaged in trade activities, that also achieved a considerable growth of gross value added in 2022. Observing the total claims by activities, BH banking sector exposure was the highest towards companies from the areas of *Trade* and *Manufacturing industry*, which accounted for 53% of the total banking sector exposure to all legal entities. Stronger lending due to the recovery of personal spending and increase of export demand in the first half of 2022 contributed to a stronger increase of debt of non-financial companies from these two activities. However, due to strengthening of risks in the second half of the year, lending slowed down, so the debt level of companies from activity Trade at the annual level was higher by 4.9%, while debt of companies from activity *Manufacturing industry* increased by 3.1% compared to the previous year.

With these two activities, a significant debt increase was registered for companies from construction sector, although a decline of gross value added of 0.7% was recorded in this activity compared to the previous year. The total banking sector exposure towards companies from activity *Construction* increased by 14.7%, which can be mainly explained by a strong growth of producer prices in construction, which is why current financing needs of companies from this area were increasing. The highest per cent growth of loan debt was recorded in *Professional, scientific and technical activities* (23%), including also companies engaged in architecture and engineering activities, and the related technical consulting. Besides, a significant growth of debt was recorded by companies from activity *Production and supply of electric energy* of 15.7%, which can be attributed to increased investment in repair of equipment due to safer electric energy production, as the largest decline of gross value added was recorded in this activity (explained in details in Chapter 2). On the other hand, a considerable decline of loanbased debt was recorded by companies from *Financial activities and insurance activity* (Graph 4.2).

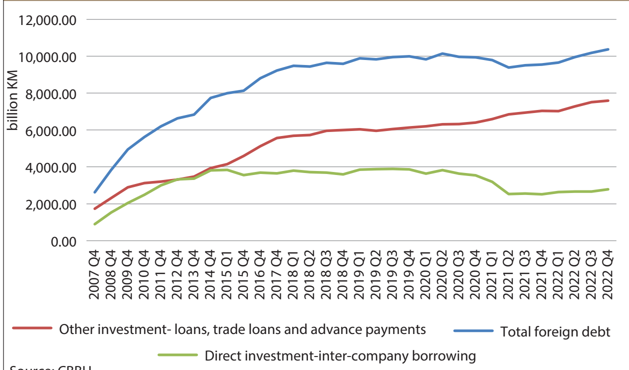
Out of the total financial liabilities, 73.1% of non-financial companies' debt was related to foreign debt on the basis of loans and trade loans and advance payments, while 26.9% of debt was related to direct inter-company debt. In 2022, the highest growth of companies' foreign debt was based on loans, which were higher by KM 538.8 million or 13%, while direct inter-company debt was higher by KM 274.5 million or 10.9%. A modest growth of non-financial companies' debt on the domestic market can be explained by a stronger growth of this sector's foreign debt with a continuing upward trend, being particularly visible during the last 10 years (Graph 4.3).

Graph 4.2: Annual Changes of Claims on Companies by the Selected Activities



Source: FBA, BARS, CBBH

Graph 4.3: Foreign Debt of Non-financial Companies



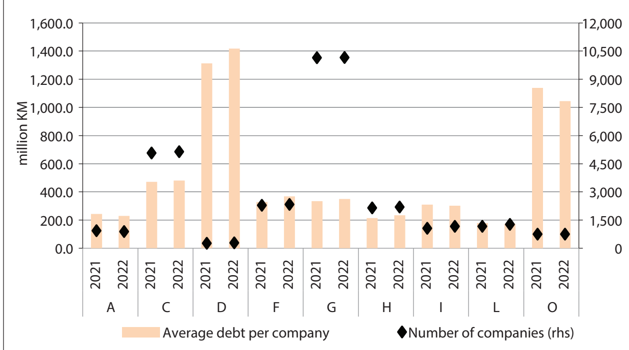
Source: CBBH

Legend:
A - Agriculture, forestry, fishing
C - Manufacturing industry
D - Production and supply of electric energy, gas, steam and air conditioning
F - Construction
G - Wholesale and retail trade, repair of motor vehicles and motorcycles
H - Transportation and warehousing
I - Accommodation and catering (hotel and catering industry)
K - Financial and insurance activities
L - Real estate business
M - Professional, scientific and technical activities
O - Public administration and defence, mandatory social insurance

OTHER:
E - Water supply, sewerage, waste management, and environment remedial activities
J - Information and communication
N - Administrative and auxiliary service activities
P - Education
Q - Health and social care
R - Art, entertainment and recreation
S - Other service activities

Despite the turbulence in macroeconomic environment over the previous three years, there were no significant changes in the number and average company debt in most activities (Graph 4.4).

Graph 4.4: Average Debt of Companies by the Selected Activities in 2021 and 2022



Source: FBA, ABRS, BHAS, CBBH

Non-financial companies in BH meet their business financing needs to a significant extent through external borrowing on the foreign market. According to the CBBH data from the Statistics of BH international investment position[11], the total debt of non-financial companies towards foreign countries, including non-profit institutions serving households (NPISH) at the end of 2022 amounted to KM 10.37 billion, which is higher by KM 819.7 million or 8.6% compared to the end of 2021.

In 2022, there was a slight increase in debt based on classic loans, while a decrease in long-term loans in maturity buckets of 5 to 10 years and over 10 years was recorded. The total companies' debt on the basis of standard loans at the end of 2022 was higher by 1.9% compared to the previous year. In corporate sector, according to contracted maturities, as in previous years, long-term loans prevail accounting for 91.5% of the total

[11] *International investment position is a stastical report showing the value and composition of financial assets of residents in an economy, representing the claims of the observed economy on non-residents, and financial liabilities of an economy's residents, representing the observed economy's residents' liabilities towards non-residents.*

loans at the end of the year. According to the data from the CRC, there was a slight debt decrease in 2022 on the basis of standard loans to companies with maturities 5 to 10 years and over 10 years. On the other hand, a debt increase was recorded in the other three categories of maturities, being slightly more important only in the category of maturities from 3 to 5 years by 10.6% (Table 4.1). On the basis of the data on loan maturity structure by the remaining maturities, the average maturity remained at almost the same level as in the previous year, amounting to 41.6 months, while the average maturity of loans to companies decreased by only 4 months in the last 10 years.

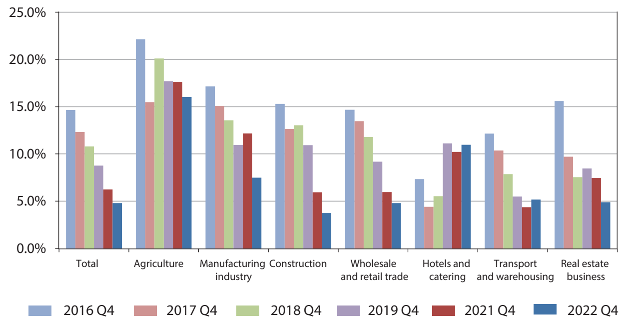
Table 4.1: Loans to Corporates, Maturity and Currency Structure of the Remaining Debt (thousands KM)

Maturity	Remaining debt and due uncollected principal					
	KM	Foreign currency loans and indexed loans				
		EUR	CHF	USD	KWD	TOTAL
Up to 1 year	487,768	182,556	0	36,658	0	706,981
1 to 3 years	935,112	329,648	0	4,042	0	1,268,802
3 to 5 years	1,133,364	575,840	237	0	0	1,709,441
5 to 10 years	1,814,435	1,678,874	313	0	488	3,494,110
Over 10 years	407,894	777,947	0	307	29	1,186,178
TOTAL	4,778,573	3,544,865	550	41,007	517	8,365,512

Source: CRC

Despite adverse macroeconomic environment, in 2022, the share of non-performing lones in the total corporate sector loans continued to decline. However, the growth of corporate financing costs due to the rise of producer prices and interest rate increase could lead to the increase in credit risk and the resulting deterioration of bank loan portfolio quality in medium term period. The share of non-performing loans in the total loans in corporate sector in the end of 2022 amounted to 4.8%, which is lower by 1.5 percentage points compared to the previous year. Observing the loan portfolio quality by activities at the annual level, in almost all the groups of economic activities, a decrease of non-performing loans in the total loans was recorded in 2022, except in the activities *Hotels and catering* and *Transport and warehousing* (Graph 4.5). On the other hand, a higher default rate in corporate sector which was recorded in 2022 indicates that due to disruptions in global supply chains due to the war in Ukraine and growing inflation which spilled over to the producer prices growth, credit risk materialised in a certain number of companies (described in details in Chapter 5).

Graph 4.5: Share of Non-performing Loans in the Total Loans to Companies, by Activities



Source: FBA and BARS, CBBH

In 2023, a continuing growth of production costs for companies can be expected, which, with gradual increase of interest rates, will increase the price of new borrowing but also the burden of the existing debt repayment. The companies which fail to achieve a growth of income in proportion to the growth of costs, could face additional difficulties in regular debt repayment. Due to the stressed risk perception and tightened lending terms, we can expect a continuation of a modest credit growth in corporate sector in the next year. Increase of non-performing loans with modest lending activity would lead to a growth of the non-performing to total loans indicator in corporate sector.

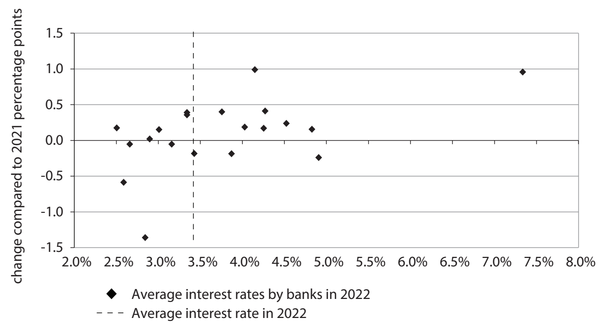
As a consequence of increasing risk and inflationary pressures, a slow growth of interest rates in corporate sector started in the second half of 2022. In the first half of the year, interest rates on new loans to non-financial companies had a slow declining trend, without higher oscillations, and from August, a slow growth of borrowing costs of the sector of non-financial companies started, which continued during the first four months of 2023. According to the CBBH data, the average interest rate [12] on new loans to the sector of non-financial companies in 2022 amounted to 3.37%, so it was higher by only 5 bp compared to the average rate from 2021. Despite the started trend of a slow growth of interest rates, financing terms for the sector of non-financial companies remained favourable throughout 2022. Analysing the borrowing costs by individual banks, a slight increase of average interest rate with most banks is evident (Graph 4.6)[13]. Although the slow growing trend of interest rates in the first four months of 2023 continued, terms of lending remained favourable, so it can be concluded that a strong growth of interest rates in the euro area had had a limited effect so far on the growth of interest rates in BH. In conditions of high

[12] *Interest rate statistics are regularly published on the CBBH web site, and calculation, i.e. weighing of interest rates with the volume of extended loans from all categories is carried out for analytic needs of calculating the average borrowing cost of corporate sector.*

[13] *At the end of 2022, Asa banka Naša i Snažna merged with ASA Banka d.d. Sarajevo, so due to the merger process, ASA banaka d.d. Sarajevo did not deliver the data on interest rates for Decembar 2022, therefore, they are not presented in the Graph.*

inflation, a continuing tightening of monetary policy is likely, i.e. raising of the ECB interest rates, which will continue the pressure on interest rates increase on BH banking market as well.

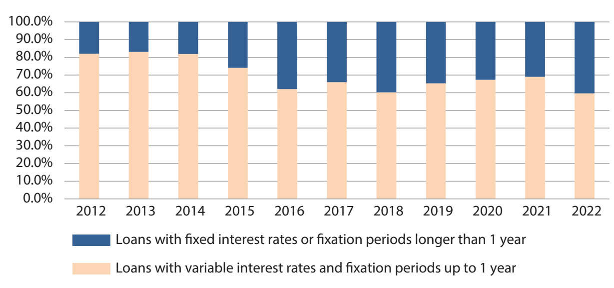
Graph 4.6: Interest Rates on Loans to Companies



Source: CBBH

During 2022, interest risk exposure of corporate sector decreased, due to an increase of borrowing at fixed interest rates. In the structure of new loans during 2022, the share of loans with variable interest rates, i.e. initial fixation periods up to 1 year decreased, amounting to 59.64%, which is lower by 9.3 percentage points compared to the previous year (Graph 4.7.). In order to reduce interest induced credit risk banks significantly increased lending with fixed interest rate in 2022.

Graph 4.7: New Loans according to the Interest Rate Fixation Period



Source: CBBH

Compared with the previous year, corporate sector exposure to currency risk did not change significantly. The currency risk in the existing monetary regime does not represent a significant source of risk for operations of companies. Debt of companies on the basis of standard loans, denominated or indexed to euro currency, at the end of 2022 amounted to 42.4% of the total bank claims on corporate sector. Compared to the previous year, their share decreased by 7.1 percentage point. At the same time, the share of loans in the local currency increased by 7 percentage points, so at the end of 2022, the remaining debt based on these loans accounted for 57.1% of the total debt of corporate sector.

The share of debt denominated in other currencies amounted to only 0.5%. By the maturity categories, in the category of maturity longer than 10 years, the largest part of the debt was denominated in EUR currency, while in all other maturity categories, the largest part of debt was denominated in KM.

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БОСНЕ И ХЕРЦЕГОВИНЕ

FINANCIAL INTERMEDIARIES

5. FINANCIAL INTERMEDIARIES

The total assets of financial intermediaries in 2022 increased by 4.8%, with the continuing dominating share of banking sector in the total assets of financial intermediaries (Table 5.1).

Table 5.1: The Financial Intermediaries Assets Value

	2020		2021		2022	
	Value, million KM	Share, %	Value, million KM	Share, %	Value, million KM	Share, %
Banks [1]	32,905.0	88.8	35,442,1	88.4	36,945.3	87.8
Leasing companies [1]	343.8	0.9	373.736	0.9	437.04	1.0
Microcredit organisations [1]	1,078.0	2.9	1,162.3	2.9	1,268.7	3.0
Investment funds [2]	811.8	2.2	947.1	2.4	1.069.3	2.5
Insurance and reinsurance companies [3]	1,911.0	5.2	2,190.1	5.5	2,335.0	5.6
Total	**37,049.6**		**40,115.3**		**42,055.4**	

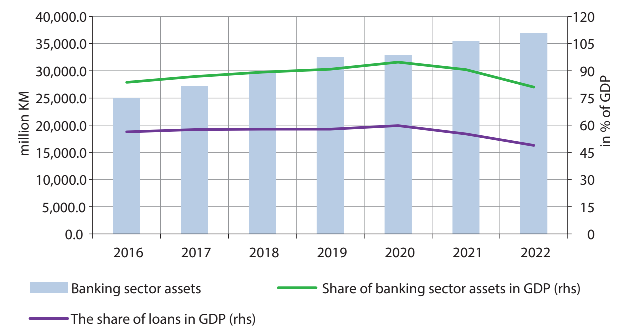
Source:
[1] - FBA and BARS
[2] - FBH and RS Commissions for Securities
[3] - Entities' Agencies for Supervision of Insurance Companies, BH Insurance Agency
Source: CBBH

5.1. Banking sector

In circumstances of rising macroeconomic risks, BH banking sector remained adequately capitalised, highly liquid, asset quality indicators were improved and a significant growth of profitability indicators was recorded in 2022. Due to a strong growth of risks that intensified during the year, the demand for loans slowed down, and at the same time, on the supply side, lending standards tightened, leading to a lack of significant credit activity. The downward phase of financial cycle, together with other indicators from the analytic framework for calibration of counter-cyclic capital buffer do not point out to the strengthening of cyclical risks in 2022. Interest rates on loans remained at low levels, and, in the second part of the year, due to the tightening of monetary policies of leading central banks and strong inflationary pressures, a slow growth of interest rates on the local market started. Yet, due to the regulators' measures, which were supported by banks' lending policies, the rise in interest rates was limited, and banks increased lending at fixed interest rates with the aim of decreasing interest risk. Prolonged period of low interest rates influenced a further decrease of average deposit maturity, and consequently, the growth of risks arising from maturity structure of funding sources. The crisis in the beginning of 2022 arising from the sanctions the EU introduced on banks in Russian ownership, was overcome by a fast and successful intervention of local regulators, preventing the risk of a sudden and uncontrolled withdrawal of household deposits from banks expanding and endangering financial stability. In the period ahead, an increase and materialization of risks are expected, particularly credit risk, due to the continuing economic activity slowdown and inflationary pressures, and interest rate growth. The results of the conducted stress testing showed that banking sector is capable of absorbing adverse macroeconomic shocks.

In the conditions of a strong inflation and real economic activity slowdown, the balance sheet amount of BH banking sector recorded a modest growth in 2022. Following a mild recovery of lending resulting from resumption of economic activities after the end of the corona crisis, the growth of macroeconomic risks spilling over to domestic economy in 2022 led to a renewed slowdown in the growth of total credit activity. Even favourable financing terms prevailing throughout the year on the domestic market were not sufficient to stimulate significant credit activity in BH. Due to prolonged uncertainty and increased risk perception, growth dynamics of the total loan portfolio additionally slowed down in the second part of the year. At the end of 2022, the share of banking sector assets in nominal GDP amounted to 81%, while the share of loans in nominal GDP amounted to 48.9%, so the observed indicators compared to the previous year were significantly lower (-9.62 and -6.31 percentage points, respectively), mainly as a consequence of a strong growth of nominal GDP (Graph 5.1).

Graph 5.1: Assets and Loans in Per Cents of GDP

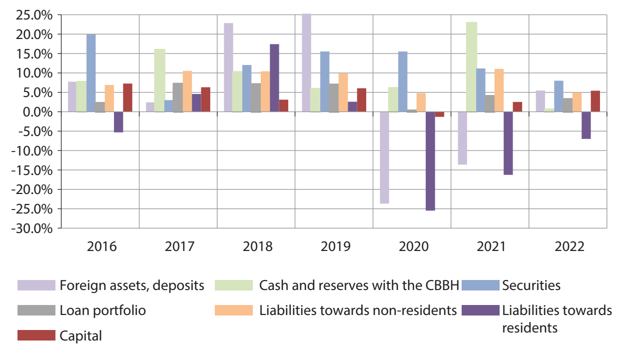


Source: FBA and BARS, BHAS, CBBH

The dominating generator of growth of balance sheet amount is still growth of local sector deposits, with deposits of private non-financial companies and government institutions providing the largest contribution to the balance sheet amount increase in 2022. After a short-term liquidity shock related to the beginning of the war in Ukraine and problems in operations of banks from Sberbank group[14] which led to a strong withdrawal of household deposits at the end of the first and the beginning of the second quarter, the deposit level in the banking system since mid second quarter of 2022 resumed its growth. At the end of the year, the total liabilities towards residents were higher by 5.5%, however, the level of household deposits slightly decreased compared to the previous year. On the other hand, for the third successive year, liabilities towards non-residents have been declining (-7.0%), indicating that domestic sources of funds in the banking sector in current circumstances were sufficient to meet the existing needs for financing of all sectors of the economy.

In 2022, the key trends in bank assets include a very modest growth of loan portfolio of only 3.3%, and the growth of securities portfolio of 8%, which, the same as in the previous years, was mainly realised through bank investments in the Entity government securities, but a slightly higher growth of investment in non-residents' securities was also recorded this year. Within liquid assets, cash and reserves with the CBBH remained at almost the same level as in the previous year, while the growth of liquid assets was mainly realised on the basis of increase of deposits with bank institutions in foreign countries (Graph 5.2).

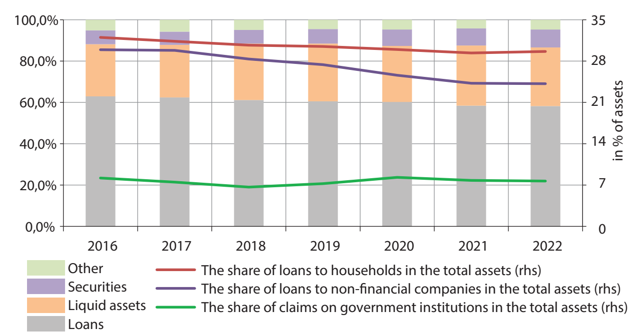
Graph 5.2: Changes of the Most Important Items of Banking Sector Balance Sheet



Source: FBA and BARS, CBBH

In 2022, the slowdown of the total credit growth was recorded despite favourable financing terms at which all local sectors were able to borrow throughout the year. As an indirect consequence of monetary policy tightening of leading central banks and deterioration of global financing terms, a slow growth of interest rates on the domestic market started in the second half of the year, which was slightly more intensive in the sector of non-financial companies. The recorded credit growth reached KM 710 million or 3.3%, while the share of loans in the total assets continued to decrease in this year (Graph 5.3). The share of the total loans in banking sector assets amounted to 60.4% being lower by 56 bp compared to the previous year. The total loans at BH banking sector level amounted to KM 22.3 billion, and, out of the total loans, KM 10.95 billion or 49.1% was related to household loans, KM 8.93 billion or 40% to loans to private non-financial companies, while KM 792.7 million or 3.6% of the total loans was related to loans to government institutions. The annual rate of credit growth of the sector of private non-financial companies amounted to only 3.9%, which can be considered a very low credit growth in high inflation circumstances. The modest growth in lending can be partly attributed to stricter credit standards, which were recorded according to the data from the Survey on the credit activity of banks in BH. Due to the growth of macroeconomic risks and lower risk appetite of banks, credit standards for loans to companies in the first three quarters of 2022 were tightened, while a slight easing of credit standards was recorded only in the last quarter.

Graph 5.3: Banking Sector Assets



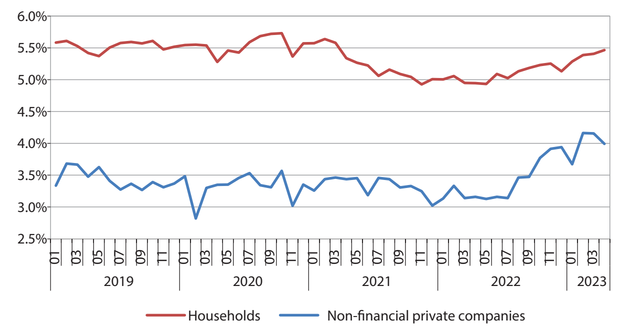
Source: FBA and BARS, CBBH

Due to the tightened financing terms on the euro area market, pressures on the increase of costs of new and existing borrowing on BH banking market started to increase for financial service users in the second part of 2022. After a long period of continuous interest rate declines, from the beginning of the third quarter of 2022, a gradual and very mild interest growth on new loans was recorded in BH (Graph 5.4). However, the intensity of interest rate growth was not even close to that on foreign markets, so, in the sector of non-financial companies and households, the average weighted interest rates on new loans in the second half of the year increased by 42 bp and 16 bp, respectively, compared to the first half of the year. Despite the slow growth of interest rates, financing terms for companies and households remained favourable in 2022. At the annual level in 2022, the average interest rate for companies amounted to 3.37% and it was higher by only 5 bp, while the average interest rate for households amounted to 5.08% and it was lower by 15 bp compared to the average rate from 2021. Local banks were able to keep lending interest

[14] *Both banks from Sber group which had operated in BH were successfully restructured in the first quarter of 2022, changing over to majority local ownership in the second quarter of 2022, which was described in details in Text box 3: Impact of the war in Ukraine on BH banking system in 2021 Financial Stability Report (https://www.cbbh.ba/content/DownloadAttachment/?id=ccada438-f71c-4d81-bd3c-8f9128eed-f04&langTag=bs).*

rates at low levels due to low financing costs, as deposits of local resident sectors dominate in the structure of bank sources (92.4%). Even two thirds of these refers to deposits in transaction accounts and sight deposits, whose interest rates are still at very low levels [15].

Graph 5.4: Average Interest Rates on New Loans

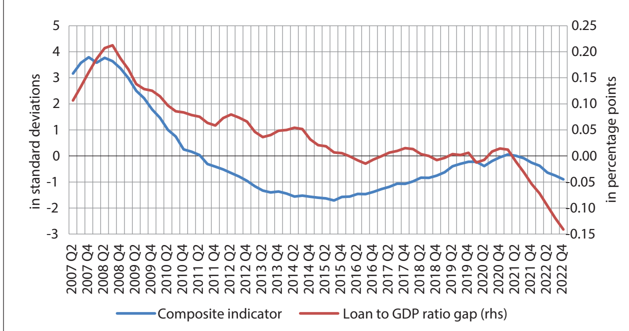


Source: CBBH

A slightly stronger lending activity was recorded in household sector compared to the sector of non-financial private companies, so the share of these loans in the total banking sector assets increased by 27 bp in 2022, accounting for 29.6% of the total assets. Annual growth of household loans amounted to 5.2%, while the most intensive lending was seen in the second quarter, due to increased demand for general consumption loans and housing loans. As a result of personal spending recovery, after the corona crisis had finished in economy, and favourable financing terms, an increased demand for household loans was recorded in the first part of 2022. However, growing risks related to prolonged geopolitical uncertainty and high inflation prevailed in the remaining part of the year, which decreased propensity to spend, and, with slight tightening of lending standards, resulted in the slowdown of lending in household sector in the second part of the year. According to the Survey on the credit activity of banks in BH, tightening of lending standards in granting loans to households was the strongest in the third quarter of 2022, and slightly stronger in the segment of housing loans compared to general purpose loans, with lending standards being eased again in the fourth quarter in both segments. General consumption loans, which accounted for even three quarters of the total lending to household sector recorded annual growth of 5.5%, while housing loans, despite the record high value of new loans in this year and a strong growth of real estate prices, recorded a more modest annual growth of 3.9% and still participate less than a quarter in the total loan portfolio of the household sector (described in more details in Text box 2: Real estate market in Chapter 2).

Graph 5.5 shows the assessment of financial cycle for BH, based on two basic indicators [16].Loan to GDP gap is a benchmark indicator for assessing credit cycle and is expressed in percentage points (right hand axis of the graph). Composite indicator has been created on the basis of a higher number of individual financial and economic indicators which were found to be reflecting to a significant extent BH financial cycle, which is expressed in standard deviations (left hand axis of the graph). Dynamics of trends of both indicators is similar and shows a very high positive gap in the initial period shown in the graph, while suggesting in the recent period that financial cycle values are negative. Loan to GDP gap showed a positive cycle of even 20% during 2008, followed by sharp slowdown of lending, and the lending cycle entered the negative area in the beginning of 2016. From that time until the first quarter of 2021, the cycle was around its long-term trend with slight positive and negative deviations. Over the last seven quarters, BH financial cycle was in a downward phase with negative gap deepening continuously, amounting to even -14.1% at the end of the fourth quarter of 2022, indicating a very weak lending without tangible heat risks.

Graph 5.5: Assessment of Financial Cycle for BH



Source: CBBH

Composite indicator in recent period shows a slightly smaller negative cycle of around -0.9 standard deviations. The mentioned difference at the very end of the sample is conditioned with other variables included in indicator assessment, such as indices of real estate prices and unemployment rate, contributing to a certain recovery of financial cycle over the previous several quarters.

The CBBH, on the basis of financial cycle indicators which were used as input variables for the model, developed the analytic framework for calibration of Countercyclical Capital Buffer– CcyB, which has been updated on quarterly basis from the second quarter

[15] *Described in details in Chapter: Households (Graphs 3.10 and 3.11).*

[16] *BH financial cycle assessment methodology was prepared according to the recommendations of the Basel Committee on Banking Supervision (BCBS) and is partly adjusted to local economy and available data series. It is described in details in 2021 Financial Stability Report (Text box 4: BH financial cycle assessment) on the following link: https://www.cbbh.ba/Content/Archive/575.*

of 2022 (Text box 3). The downward phase of financial cycle, together with other indicators used in calibration of Countercyclical Capital Buffer does not indicate the strengthening of cyclical risks in 2022, implying that in current circumstances, there would be no need to introduce additional capital buffer for banks by regulators. A prolonged inflation period, with further deterioration of economic trends, gradual tightening of financing conditions and change of interest rates on the domestic market could decrease propensity to spend, and demand for loans in 2023, which is why financial cycle will certainly stay in recession phase during the next year. The expected stabilisation of inflation in 2024 should slow down a strong nominal growth of GDP, which is why a negative gap should gradually start to close, which, with the recovery of lending could lead to financial cycle moving to a positive area.

Text box 3: Analytic framework for calibration of counter cyclic protective layer of capital in BH

The CBBH further expanded the set of indicators that were developed for the assessment of the financial cycle and created a "Heat map", in order to obtain indications of whether there is overheating in certain segments of the economy. In accordance with the recommendations of the Basel Committee for Banking Supervision, the indicators of the financial cycle represent the starting point, that is, the input variables for calibrating the countercyclical protective layer of capital. In addition to the indicators of the financial cycle, the credit to GDP gap and the composite indicator, the analytical framework includes additional indicators based on loans, on the real estate market, macroeconomic indicators and indicators related to credit conditions. Therefore, a total of 18 indicators divided into four groups are used.

The first group consists of **basic indicators**: the private sector bank credits to GDP gap [17],the total credit to GDP gap[18], financial cycle index and annual change of the private sector bank credits to GDP ratio. The second group includes **credit indicators**: nominal annual bank credits growth to private sector, nominal annual credit growth to private sector in total (which includes borrowing of the private sector from domestic financial institutions and the private sector borrowing from abroad), nominal annual credit growth of non-financial companies and nominal annual growth of household loans. The group of **real estate market indicators** includes: newly approved non-financial companies loans to GDP ratio (last four quarters), newly approved households loans to GDP ratio (last four quarters), nominal annual growth of real estate prices, annual change in the real estate price index, and the current account deficit to GDP ratio (annualized). The last group of indicators is **the indicators of lending terms and standards** and consists of 5 indicators: the spread of interest rates for non-financial companies, the spread of interest rates for households, lending standards for non-financial companies, lending standards for households in the category of housing loans, and lending standards for households in the category of consumer loans.

The final recommendation for the CCyB rate is made on the basis of the weighted average score for all indicators used. The signal for the introduction of CCyB is the weighted average score of all indicators that exceeds the value of 5. The regulatory framework in Bosnia and Herzegovina, too, stipulates the rate upper limit of the capital countercyclical protective layer of 2.5%, and in accordance with the experiences of other countries, in the analysis we assumed its linear distribution with 0.5% deviations.

A comprehensive assessment of indicators on the basis of which CCyB calibration can be done is presented in the form of a "Heat map". The colours on the Heat map are set according to the typical "red-yellow-green" gradient structure that central banks usually use to give a visual representation of the obtained scores indicating the degree of risk. Scores in the range of 8 - 10 on the Heat map are shown in different shades of red and indicate a high degree of risk and an urgent need to introduce a positive CCyB rate. Scores in the range of 4 - 7 are shown in different shades of yellow, and those with darker shades of orange indicate the need to activate the CCyB rate. Scores in the range of 1 – 3 are shown in green on the Heat map and do not indicate risks in terms of overheating of the financial cycle. The Heat map and the results of the analysis with data for the fourth quarter of 2022 are shown below.

The average weighted score of all indicators on the basis of which the capital countercyclical protective layer is calibrated, in the fourth quarter of 2022, shows that at this moment there is no signal for the introduction of the CCyB rate. The total weighted score is 4.1, thus below the threshold of 5 with 0% recommended CCyB rate. Although some indicators (such as lending standards and terms, or housing price trends) began to signal a transition to the upward phase of the financial cycle, already several quarters ago, most credit indicators, as well as the composite indicator, confirm that the change has not yet occurred.

[17] *Reference indicator, defined in line with the CBBH methodology*

[18] *CBBH methodology*

TB3: Heat map

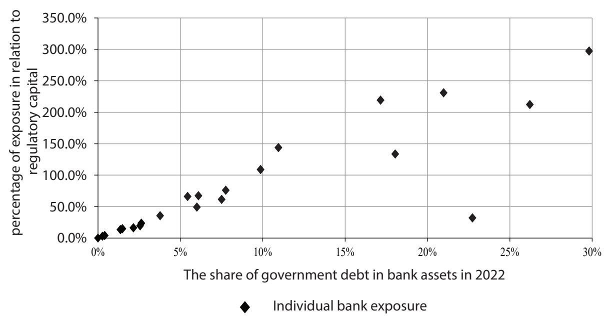
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Q4 2022			
Basic CCyB indicators																	Value	Score	CCyB rate	Weight
Private sector bank loans to GDP gap																	-14.1%	1	0.0%	9%
Total loans to GDP gap																	-11.2%	1	0.0%	3%
Index of the financial cycles																	-0.90	4	0.0%	45%
Annual change of private sector bank loans to GDP																	-5.0%	1	0.0%	3%
Credit indicators	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Value	Score	CCyB rate	Weight
Nominal annual growth of private sector bank loans																	4.8%	4	0.0%	3%
Nominal annual growth of private sector total loans																	6.6%	5	0.0%	3%
Nominal annual growth of nonfinancial companies loans																	5.3%	5	0.0%	3%
Nominal annual growth of household loans																	5.2%	5	0.0%	3%
Real estate indicators	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Value	Score	CCyB rate	Weight
Newly approved non financial companies loans to GDP (last four quarters)																	7.5%	5	0.0%	3%
Newly approved household loans to GDP (last four quarters)																	7.8%	5	0.0%	3%
Nominal annual growth of real estate prices																	19.0%	10	2.5%	5%
Annual change of real estate prices index																	0.9%	5	0.0%	5%
Current account deficit to GDP (analysed)																	-4.5%	4	0.0%	2%
Credit terms indicators	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Value	Score	CCyB rate	Weight
Spread of interest rates for nonfinancial companies																	3.0%	5	0.0%	2%
Spread of interest rates for households																	4.0%	7	1.0%	2%
Credit terms for approval of nonfinancial companies loans																	-14.0%	4	0.0%	2%
Credit terms for approval of household housing loans																	-29.0%	3	0.0%	2%
Credit terms for approval of household consumption loans																	-14.0%	4	0.0%	2%
																		Score	CCyB rate	Weight
Source: CBBH																		4.1	0.0%	100%

In 2022, the exposure of the banking sector to the government sector increased slightly compared to the previous year, but it is still at a moderate level, and therefore the risks to financial stability arising from the government sector are not high. According to the monetary and financial statistics of the CBBH, the total exposure of the banking sector to the government sector at the end of 2022 amounted to KM 3.05 billion and is higher by KM 77.5 million or by 2.6% compared to the previous year. In 2022, banks increased their exposure to the government sector based on the purchase of Entities' securities, while at the same time a slight decrease in loans to government institutions was recorded, and the share of government debt in the total assets of the banking sector decreased to the level of 7.7%. At the level of the entire banking system, the exposure to the government sector at the end of 2022 was at the level of 75.9% of the regulatory capital of the banking system. However, some banks have a high exposure to the government sector, close to the maximum allowed limit of up to 300% of regulatory capital, which makes them more vulnerable compared to the rest of the system, especially in the circumstances of the rise in the yield of Entities' securities that began in the second half of 2022. Due to the increase in the yield of domestic debt securities, banks reported negative revalorisation values based on the valorisation of debt securities, which affected the decrease in the value of their regular core and regulatory capital. In order to mitigate the negative effects, at the end of the second quarter of 2022, the Banking Agency of the RS issued the Instruction allowing banks to exclude from the calculation of core capital the amount of the temporary regulatory adjustment related to changes in the value of revalorisation reserves based on the valorisation of debt securities of the RS Entity government and RS local communities' governments[19]. Graph 5.6 shows the individual exposure of banks to all levels of government in BH, including extra budgetary funds and social care funds [20].

19 *Instruction on the temporary measure related to the calculation of the bank's regulatory capital, August 2022 and Instruction on the amendment to the Instruction on the temporary measure related to the calculation of the bank's regulatory capital, February 2023.*

20 *Data on individual bank exposures are taken from monetary and financial statistics of the CBBH. In accordance with the IMF's methodology, data on Entities' securities also include securities of public companies.*

Graph 5.6: Exposure to Government Sector, by Banks, in 2022

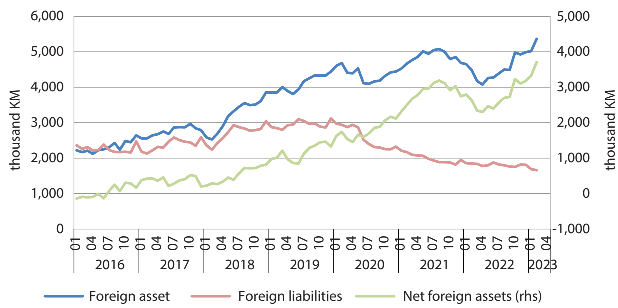


Source: CBBH

In 2022, liquid assets achieved significantly lower growth compared to the previous year, which was mainly influenced by short-term episodes of withdrawal of deposits from the banking system of Bosnia and Herzegovina. Starting from the middle of the second quarter, the level of deposits in the banking system of BH began to rise again, and a satisfactory level of liquidity in the banking sector was preserved. In the first quarter of 2022, a decrease in basic liquid assets was recorded in the total amount of KM 704.5 million or 6.4%, with the largest decrease in liquid assets occurring at the end of February, when the initial withdrawal of deposits from Sber banks followed (KM 458.3 million). The decrease in basic liquid assets continued during the months of March and April, when a significant outflow of deposits from other banks in the system was also recorded (KM 545.5 million). From the month of May 2022, liquid funds in the banking sector of BH began to grow again, and the same trend continued until the end of the year. At the end of the year, liquid assets amounted to KM 10.88 billion, being higher by 1.3% compared to last year, but year on year, the share of liquid assets in total assets decreased slightly. Within the items of liquid assets, funds in deposit accounts with foreign banks increased the most, by 5.5%, and cash in bank vaults by 2.8%, while funds in the reserve account with the CBBH remained at almost the same level as at the end of the previous year.

In the structure of funding sources, liabilities to non-residents continued to decrease during 2022, and their share in the structure of total funding sources decreased for the first time to a level lower than 5% at the end of the first quarter of 2023. According to CBBH data, the foreign liabilities of the banking sector at the end of 2022 amount to KM 1.81 billion, recording a decrease of KM 135.9 million or 7% compared to the end of the previous year. The decreasing trend of foreign liabilities continued during the first quarter of 2023, when the value of foreign liabilities of commercial banks in BH fell to a historical minimum of KM 1.5 billion (Graph 5.7). On the other hand, the foreign assets of commercial banks recorded a gradual value decline until the end of April 2022, after which they began to increase more intensively. At the end of the year, foreign assets reached a value of KM 4.9 billion, and at the end of the first quarter of 2023, they reached a historical maximum in the amount of KM 5.5 billion. The banks achieved the foreign assets increase as a result of an increase in funds in deposit accounts with foreign banks, an increase in investments in foreign bonds of Governments and corporations, and based on an increase in short-term investment transactions related to foreign banks. In the circumstances of the growth of interest rate risk coming from the international environment, at the beginning of the second quarter of 2023, the regulators made decisions on temporary measures to limit the exposure of banks towards central governments or towards central banks outside BH to a maximum amount of 100% of the regulatory capital[21]. The results of the analysis on interbank and cross-border exposures with data at the end of 2022 indicated that a higher risk of contagion arises from cross-border exposures than from exposure on the domestic interbank market (Text box 4).

Graph 5.7: Foreign Assets and Liabilities of Commercial Banks

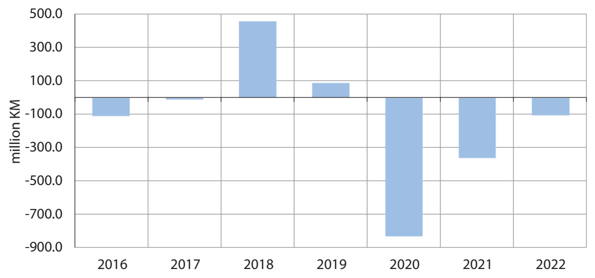


Source: CBBH

In 2022, the BH banking sector recorded a net outflow of foreign liabilities in the amount of KM 106.8 million (Graph 5.8). The decrease of foreign liabilities is the effect of the outflow of all foreign liabilities categories, and to the greatest extent the reduction of liabilities towards the majority foreign owners. Due to the growth of risks in the macroeconomic environment, no significant growth in credit activity is expected, which would put pressure on funding sources. It is likely that foreign liabilities will continue their downward trend in the coming period, bearing in mind the continuous growth of domestic sources of funds. In the course of 2022, the largest part of credit activities was funded from domestic sources. However, it is important to point out that the maturity structure of domestic sources of funding has further deteriorated in the observed period due to the increase in the share of short-term deposits in total deposits.

[21] *Explained in more details in the regulatory framework.*

Graph 5.8: Flows of Foreign Liabilities in the Banking Sector



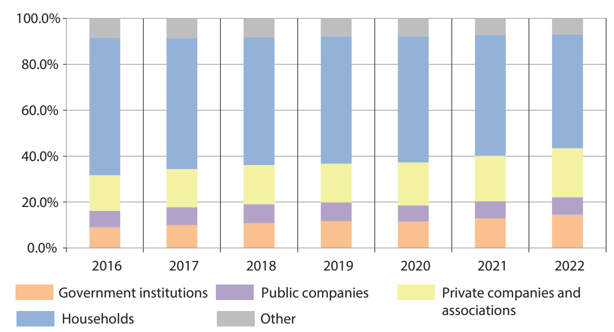
Source: CBBH

Text box 4: Network analysis of systemic risk spillovers

Although interbank exposures were not significant in previous years either, according to data from the end of 2022, the mutual exposures of domestic commercial banks decreased compared to the end of the previous year, both in terms of the total amount of exposure[22], as well as according to the number of mutual connections between banks. As a result, the risks of interbank contagion due to the spill over of systemic risks between banks were further reduced, which was confirmed by the network analysis of the spill over of systemic risks. The conducted network analysis, which, as in previous years, included a credit shock and a financing shock, found lower values of the contagion index and the vulnerability index in most banks in the system compared to previous years. Analysis of cross-border connectivity according to data for the end of 2022 indicated that a greater risk of contagion arises from cross-border exposures than from exposures on the domestic interbank market. Given that the banking sector in Bosnia and Herzegovina is dominated by banks in majority foreign ownership, the findings of the analysis confirmed their significant cross-border exposure and dependence primarily on parent banking groups. The biggest exposures of BH banks exist to Italy, Austria and Germany, and then to Croatia, Turkey and Slovenia. The level of risk of cross-border banking contagion estimated in the analysis depends on which of the conditions will be chosen for the existence of cross-border contagion. A stricter condition under which banking contagion exists if a bank's capital adequacy ratio falls below the regulatory prescribed level, due to default and 50% cessation of financing by non-resident sectors, showed that ten banks could face undercapitalization in the event of major shocks in one of seven countries, while with the same shocks, three banks would have losses that exceed the amount of their core capital in the event of major shocks in one of the three countries (Italy, Germany, Turkey). It is important to note that the indirect effects of the contagion were not recorded thanks to small interbank exposures and good capitalization of all commercial banks in Bosnia and Herzegovina. Also, by adopting temporary measures to limit the bank's exposure, which will be applied in the period from September 30, 2023 until the end of 2024, Banking Agencies have limited the banks' exposures to all central governments or central banks outside BH, or the exposures to those as collateral issuers, or providers of intangible credit protection, which are assigned a risk weight of 0%, at the amount of up to 100% of the regulatory capital. The aforementioned temporary measures of the Banking Agencies will lead to an additional reduction of risks that may arise from excessive cross-border exposure of banks.

In 2022, there is a slowdown in the growth of domestic resident sector deposits. At the end of the year, the total deposits of residents amounted to KM 29.2 billion, and compared to the end of 2021, they increased by KM 1.44 billion or 5.2%. In 2022, the largest contribution to growth was made by deposits of private non-financial companies, which account for 21.3% of total deposits (Graph 5.9). At the end of 2022, these deposits amounted to KM 6.23 billion and recorded an increase of KM 742.1 million, or 13.5% compared to the previous year. Also, deposits of government institutions recorded a significant growth in the amount of KM 649.3 million or 18.2%, while deposits of public companies increased by KM 147.8 million or 7.1%. On the other hand, household deposits amounted to KM 14.58 billion at the end of 2022, and recorded a decrease of KM 164 million or 1.1% compared to the same period of the previous year.

Graph 5.9: Sector Structure of Deposits of residents



Source: FBA and BARS, CBBH

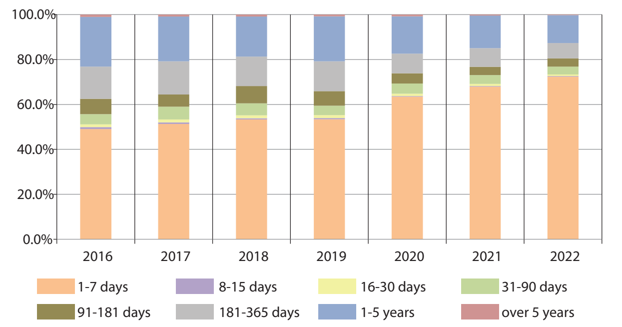
According to CBBH data, at the end of 2022, a-vista deposits made up 68.1% of total household deposits, with deposits on transaction accounts accounting for 41.6%, and demand deposits with 26.5% in total household deposits. At the same time, the downward trend of the long-termed deposits' share continued, being a little bit more intense than in previous years. The share of long-term deposits in total household deposits decreased by 5 percentage points compared to the previous year, from a level of 34.5%, at the end of 2021, to a level of 29.5%, at the end of 2022. The sudden withdrawal of

22 *Total interbank exposures of commercial banks in Bosnia and Herzegovina as of December 31, 2022, amounted to KM 52.1 million, which is a 29.4% lower value compared to the end of 2021.*

deposits, which was caused by the beginning of the war in Ukraine, led to a decrease in household deposits of all maturity categories in the first quarter of 2022, in the total amount of KM 908 million or 6.2%. After the initial decrease in deposits of all maturity categories, by the end of the year only long-term household deposits continued to fall, while other categories of household deposits began to record gradual growth again in the second part of the year. The most intensive growth was achieved by deposits on transaction accounts (KM 618 million or 11.3%) and short-term deposits (KM 41.6 million or 13.4%), while on an annual level a decrease in term long-term deposits was registered in the amount of KM 773.5 million or 15.3%. Similar trends marked the first quarter of 2023, in which the dominant growth of deposits on transaction accounts continues, as well as the decline of term deposits of households. In addition to the increased uncertainty related to the growth of risks in the domestic and international environment, the extremely low deposit interest rates on household term deposits certainly contribute to this trend, especially compared to strong inflation. The average weighted interest rate on household term deposits, in the second half of 2022, recorded an increase of 40 basis points, from an average level of 0.89%, in the first half of the year, to an average level of 1.29% in the second half of 2022, while in the same period, annual inflation increased by 5.1 percentage points (from the level of 11.45%, in the first half of the year, to the level of 16.53% in the second half of 2022). The results of the survey on inflation expectations from December 2022 indicate a gradual stabilization of short-term inflation expectations, but still high inflation is expected in 2023, which, along with extremely low passive interest rates, does not contribute to the citizens' motivation regarding the deposits' terming, especially at long term.

In 2022, the maturity shortening of funding sources continued. It was more evident than in the previous year, given that only deposits on transaction accounts had significant growth, which led to further deterioration of the term structure of funding sources. Deposits with a maturity of 1 to 7 days achieved annual growth of 11.7%, in 2022, and increased their share in total deposits by 4.5 percentage points, reaching a level of 72.4% at the end of 2022. The share of the deposits category with a remaining maturity of 91 to 180 days remained at the level of 3.7%, as in the previous year, while other categories of deposits of all maturities recorded a decline of the share in total deposits. The decrease in the share of deposits with a remaining maturity of more than 1 year is particularly evident, which decreased from the level of 15%, at the end of 2021, to the level of 12.7% of total deposits of all resident and non-resident sectors, at the end of 2022. The share of long-term deposits with a remaining maturity of more than 5 years account for only 0.3% of total deposits (Graph 5.10).

Graph 5.10: The Total Deposit Structure by the Remaining Maturity

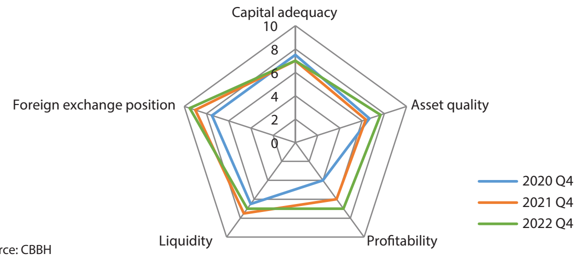


Source: FBA and BARS, CBBH

The assessment of the banking sector stability is summarized in the financial health indicator diagram and shows changes in the main indicators based on which capital adequacy, asset quality, profitability, liquidity and foreign exchange risk in the banking sector are assessed. In 2022, the banking sector of BH maintained good capital adequacy, increased asset quality and profitability, and preserved high liquidity, despite a short-term episode of deposits withdrawal from the banking sector. Despite this, the perception of risk remained significantly high, given that it is expected that double-digit inflation rates could be maintained in the first half of 2023, with a gradual decrease in the second part of the year, which, with further deterioration of economic trends, a gradual tightening of financing conditions and a correction of interest rates on the domestic market could result in the strengthening and materialization of credit risk in the medium term. Growing risks in the macroeconomic environment and the expected slowdown in economic activity, which according to CBBH projections will be most pronounced during 2023, could result in an additional slowdown in credit activity, which has already been damped for a long period of time, especially in the sector of non-financial companies.

Banks achieved a strong increase in profitability, in 2022, primarily thanks to the continued growth of operating income, and due to the slight increase in net interest income caused by a slight increase in credit activity, but also as a result of a slight increase in average weighted interest rates on newly approved loans, that started in the third quarter. The values of the liquidity indicator still reflect the high liquidity of the banking sector, despite the slight decline of the score recorded this year. The high score in the foreign exchange position segment, which is at an almost maximum level, indicates that the exposure to foreign exchange risk is extremely low, given that EUR, the anchor currency of the domestic currency in the currency board, is the dominant foreign currency in the banking sector. The banking sector is adequately capitalized, significantly above the required regulatory minimum, and the score of the capitalization indicator remained at the level of the previous year, while the score in the segment of assets quality improved significantly thanks to the reduction of the share of non-performing loans in total loans.

Graph 5.11: Chart of the Banking Sector Financial Soundness Indicators



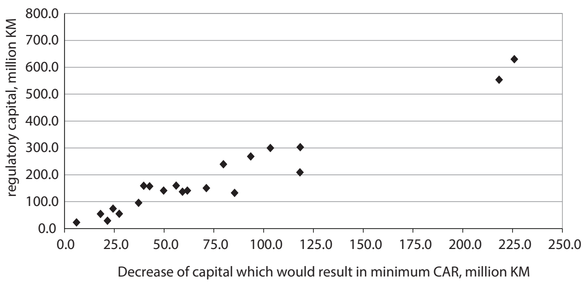
Source: CBBH
Assessment of stability for each variable is based on simplified standardisation of several indicators representing the basis for quantification of synthetic assessment of degree of stability of various segments of banking sector operations. To make indicators comparable, they need to be transformed first, i.e. standardised, after that, depending on the obtained value of z-score, each indicator is assessed according to relative position in relation to its empiric distribution. Increase of distance from the centre of the chart for each variable, i.e. higher grade indicates the increase of stability in the system, while grades closer to the centre warn of the increase of risk or decrease of resilience of banking sector and accordingly, a higher threat to stability.

The banking sector of Bosnia and Herzegovina was adequately capitalized at the end of 2022, and all banks in the system meet the prescribed regulatory requirements in terms of capital adequacy and financial leverage ratio. At the end of 2022, the rates of core and regular core capital, amount to 18.7%, the rate of regulatory capital is 19.6%, while the rate of financial leverage at the level of the banking sector is 9.9%. Core and regulatory capital recorded growth of 3.5% and 4.1%, compared to the end of the previous year. Within capital items, a significant amount of the included realized profit from the current period and previous years contributed to the growth of capital, while on the other hand, due to the increase in the yield on debt securities in which banks invested, there was a decrease in other comprehensive profit.

The total amount of risk exposure amounts to KM 20.5 billion, which represents an increase of KM 757.8 million or 3.8%. Of the total risk exposure, exposures weighted by credit risk account for 91.4% of the total risk exposure, market risk exposures account for 0.7% of the total risk exposure, and operational risk exposures account for 7.9% of the total risk exposure. In the structure of the total risk exposure, there was an increase in the share of credit risk exposure, as a reflection of mild credit growth, while the market risk exposure decreased mostly as a result of the reduction of the net open position for EUR currency at one bank.

Graph 5.12 shows how much the regulatory capital should be reduced for each individual bank, along with the total level of weighted risk as of the end of 2022, in order to bring the capital adequacy ratio down to the regulatory minimum of 12%. The Graph shows that most banks, with an unchanged level of risky assets, could withstand a significant reduction in regulatory capital before their CAR would drop to the lower limit of the regulatory minimum. The capital adequacy of banks with lower capitalization indicators improved in the previous period, compared to the system average, by including the realized profit of the current period in the capital. However, certain banks in the system are more vulnerable in the event of risk materialization, given that a relatively small reduction in regulatory capital for these banks would jeopardize the fulfilment of the required level of capital adequacy.

Graph 5.12: The Effect of Regulatory Capital Decrease on CAR, Q4 2022



Source: FBA and BARS, CBBH

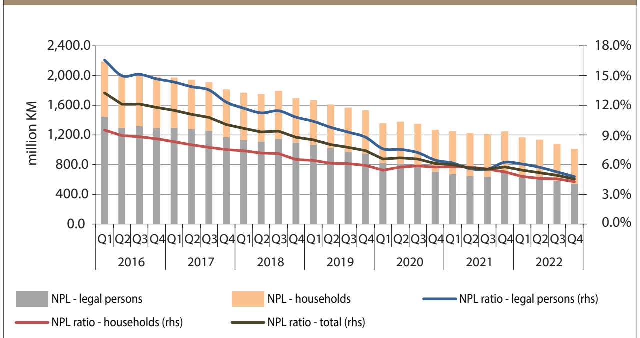
In 2022, the improvement of the asset quality indicators at the system level continued, which is reflected in the lowest value of non-performing loans compared to total loans, not recorded since 2009. However, due to the slowdown in the growth of real economic activity and high inflation, along with the gradual tightening of financing conditions, and the growth of interest rates on the domestic market, the strengthening and materialization of credit risk is expected in the mid-term period.

At the end of 2022, the share of non-performing assets in total assets is 2.5%, which represents a decrease of 61 bp compared to the end of the previous year. During the year, balance sheet and off-balance sheet exposures at credit risk level 3 recorded a decrease in the amount of KM 235.7 million (18%), while total financial assets were higher by KM 1.92 billion or 4.7%. The largest part of non-performing assets consists of non-performing loans, which at the end of 2022, amounted to KM 1.01 billion, and are lower by KM 235.7 million or 18.9% compared to the end of the previous year. A significant decrease of non-performing loans with the simultaneous growth of total loans resulted in a decrease of the non-performing loans share in total loans, thus, at the end of 2022, the NPL ratio was 4.5%, which is the lowest value recorded after the outbreak of the financial crisis in 2009. During 2022, banks recorded a reduction in non-performing loans to the greatest extent based on the accounting and permanent write-off of assets assessed as a loss, and implemented activities for the collection of non-performing loans. Along with the permanent and accounting write-off and collection of non-quality receivables, in 2022, the total value of loans that changed from quality to non-quality receivables was slightly lower compared to the previous year, which also contributed to the improvement of the loan portfolio quality. According to CRC data, in 2022, a lower default rate was recorded in the household sector in terms of the value and number of lots that changed from high-quality to low-quality claims (from a level of 1.66% in 2021 to a level of 1, 23%). At the same time, the negative external shocks that led to a strong increase in risk in the macroeconomic environment and the consequences of the corona virus pandemic had a greater impact on the operations of companies that are more sensitive to the rise of raw material prices and that were exposed to difficulties in global supply chains, thus, in the segment of legal entities, the default rate increased from the level of 0.82% in 2021 to the level of 1.31% in 2022.

Thanks to the adopted measures of the regulator, by the end of 2022, a significant increase in interest rates (200 bp or more) was recorded in a very small part of the loan portfolio. Although there is no data available at the level of the banking system of BH, the FBA data are indicative, according to which a significant increase in the interest rate, at the end of 2022, compared to the reference date (June 30, 2022), was recorded for the loan portfolio in the amount of KM 108.5 million, which makes up only 0.7% of the total loan portfolio of banks from FBH. In the case of the credit portfolio of legal entities, a significant increase in the interest rate was recorded in the amount of KM 103.5 million or 1.2% of the credit portfolio of legal entities, while in the case of the credit portfolio of individuals, it was only KM 5 million or 0.06% of natural persons portfolio. Also, banks from FBH still do not have in their portfolios modified credit exposures defined by the provisions of the Decision on temporary measures to mitigate the risk of interest rate growth.

In the course of 2022, non-performing loans in the corporate and household sectors continued their downward trend, thus, at the end of 2022, the share of non-performing loans in total loans in the corporate sector amounted to 4.8%, while in the household sector this indicator amounted to 4.3 % (Graph 5.13).

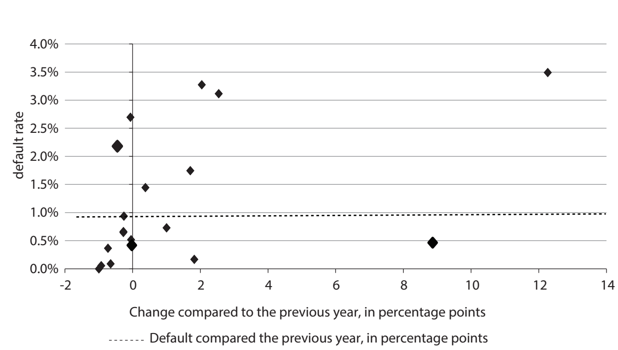
Graph 5.13: Credit Portfolio Quality



Source: FBA and BARS, CBBH

In the segment of legal entities, a decrease in non-performing receivables was recorded in almost all activities. However, the higher rate of default recorded in 2022 in the segment of legal entities indicates that there was a materialization of credit risk in non-financial companies that were most affected by the negative effects of the corona crisis and the consequences of the geopolitical situation after the start of the war in Ukraine, which spilled over into the domestic economy. By analysing the default rate by banks, it can be concluded that in more than half of the banks in the system, the credit risk increased or the credit risk remained at approximately the same level as the previous year (Graph 5.14) [23]. Due to the continued weakening of macroeconomic conditions and high inflation, the credit risk in the sector of non-financial companies can be assessed as increased, and a somewhat significant deterioration in the quality of the corporate sector credit portfolio can be expected in the medium term.

Graph 5.14: Default Rate in Corporate Sector, by Banks in 2022

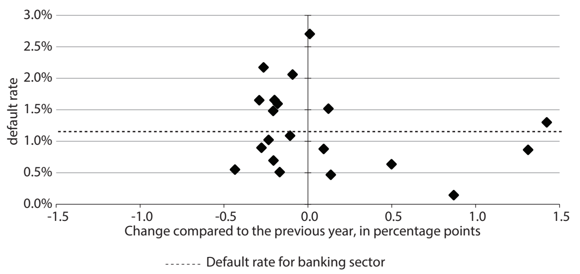


Source: CRC, CBBH

The decline in the default rate in the household sector was almost equally influenced by trends in all banks, which recorded a lower default rate compared to the previous year. On the other hand, there are two banks with a relatively high share of non-performing loans in total loans, which recorded a higher intensity of reclassification into non-performing loans in 2022 (Graph 5.15). Although a lower default rate was recorded in the household sector compared to the previous year, in 2022, there was a significant increase in credit risk level 2 , in the amount of KM 176.4 million or 25%, which indicates that there is a gradual growth of credit risk, and the risk is most significant in the portfolio of household loans intended for general consumption.

23 *Graph 5.13 does not show one bank that is an outlier, given that in the previous year it had an insignificantly small default rate value, which is why it recorded a drastic percentage increase of the default rate in 2022.*

Graph 5.15:Default Rate in Household Sector, by Banks in 2022

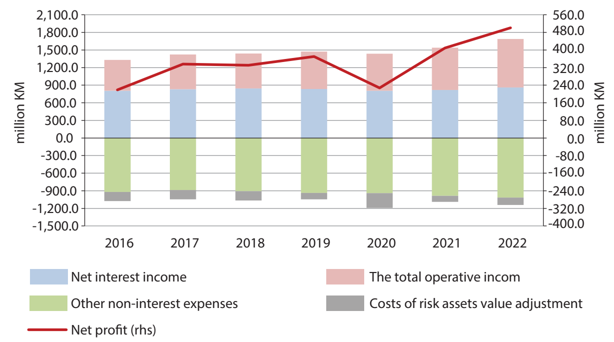


Source: CRC, CBBH

In 2023, the interest rates are expected to continue to rise, given that by the end of 2022, the tightening effects of the leading central banks' monetary policies, and the growth of interest rates on the euro area market have almost not spilled over onto the financing costs of the household sector. And while, on the one hand, banks have significantly reduced the interest-induced credit risk by increasing lending with a fixed interest rate, on the other hand, if they continue with such practices, in the medium term they could face pressure to maintain stable net interest margins. In the circumstances of high inflation, the pressure is expected on the increase of interest costs on funds domestic sources. However, unlike the European market, where depositors began withdrawing deposits, being dissatisfied with the level of interest rates, banks in BH will be faced with this scenario to a much lesser extent, due to limited alternative forms of investment and savings on the domestic market. From such credit policies, it is evident that banks expect to be able to maintain stable deposit growth with a limited increase in interest rates on deposits, and that they have incorporated estimates on the financing costs growth, to a significant extent, into the effective interest rate on newly contracted loans with a fixed interest rate. In accordance with the practices of previous years, it can be expected that any imbalance in active business with clients that affects the decline in net income will be compensated by a decrease in operating expenses and an increase in fees for services performed within operating income.

At the end of 2022, the banking sector of BH had a record net profit and achieved significantly higher return rates on average assets and average equity in a relatively unfavourable macroeconomic environment. In the coming period, due to the expected strengthening of credit risk, the banking sector could face pressures on profitability. At the end of 2022, the banking sector of BH reported a record net profit, which for the first time exceeded the value of half a billion KM (KM 500.7 million), which represents a respectable level of realized profit higher by as much as 22.4% compared to the same period last year. Banks achieved profitability growth according to the same model as in the period before the outbreak of the pandemic. Still, the biggest contribution to the growth of profitability is the continuous, dynamic growth of the total operating income that banks achieved based on the increase of the income from provided services fees. During 2022, almost all banks increased fees for rendered services, given that during the corona crisis, most banks froze the growth of fees in order to provide individuals and companies with adequate support in the fight against the negative effects of the pandemic. The main sources of income for banks, interest income, continued the growth trend, started in the second part of 2021, with a simultaneous decline in interest expenses. The growth of interest income was achieved thanks to the slight increase in credit activity, and the slight increase of average weighted interest rates in the sector of non-financial companies, which was recorded in the second part of the year. On the expenditure side, as a result of the increase in the cost of correction of the value of risky assets, as well as other business and direct expenses, as well as, total operating expenses, there was an increase in total non-interest-bearing expenses (Graph 5.16).

Graph 5.16: Banking Sector Profit



Source: FBA and BARS, CBBH

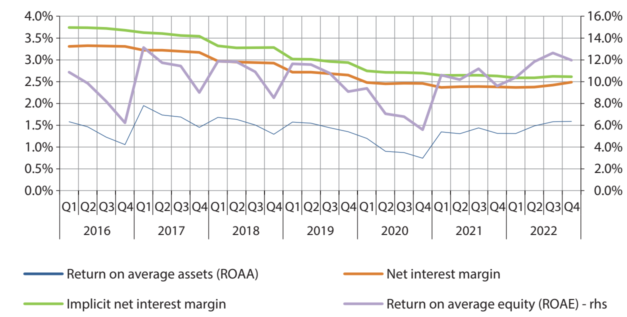
All banks in the system reported a positive financial result, with the largest part of the banking sector's profits still concentrated in a few large banks. Thus, the two largest banks made a profit that accounted for 42.6% of the profit of the entire sector, while the four most profitable banks generated 58.3% of the total net profit of the banking sector.

At the end of 2022, total interest income amounted to KM 1 billion and compared to the same period last year, it was KM 6.4 million or 0.6% higher. Total interest expenses and other similar expenses at the end of the year amounted to KM 143.2 million, and being lower by KM 34.9 million, or 19.6% compared to the same period of the previous year. Net interest income amounted to KM 859.9 million, and was higher by KM 41.4 million, or 5.1% compared to the same period of the previous year.

In 2022, the dynamic growth of total operating income continued, which, at the end of the year, amounted to KM 829 million. Compared to the same period last year, total operating income increased by KM 108.6 million, or 15.1%. The growth of the banks' operating income was achieved mostly from the increase of rendered services' fees, which significantly contributes to maintaining a high level of profitability in the system. The share of operating income in the total income of the banking sector is 45.2%, and it is higher by 3.5 percentage points compared to the previous year.

At the end of the fourth quarter of 2022, ROAA and ROAE profitability indicators amount to 1.6% and 12.0%, respectively, with the growth of 0.3 and 2.4 percentage points, respectively, compared to the same period of the previous year. The growth of the profitability indicator is the result of a higher realized profit at the end of 2022, compared to the same period of the previous year, with, at the same time, a negligible increase of average assets and a decrease in average equity (Graph 5.14)[24].

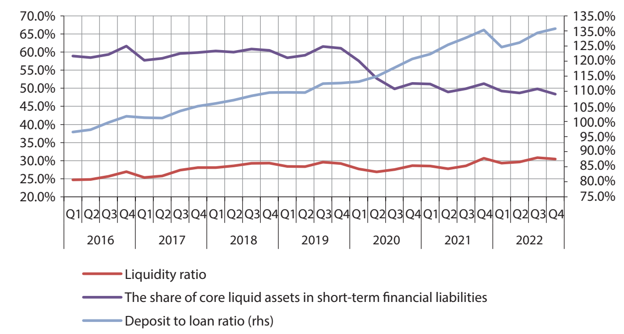
Graph 5.17: Profitability Indicators



Source: FBA and BARS, CBBH

In 2022, under the influence of a short-term episode of withdrawal of deposits, banks recorded a slight decrease in the value of the liquidity indicator compared to the previous year. At the end of 2022, liquid assets accounted for 30.5% of banking sector assets, while 48.4% of short-term liabilities were covered by liquid assets (Graph 5.18). The deposit-to-credit indicator, at the end of 2022, reached a level of 130.8%, indicating that credit activity on the domestic market is fully financed by non-financial sector deposits.

Grafikon 5.18: Indikatori likvidnosti



Source: FBA and BARS, CBBH

Liquidity Coverage Ratio (LCR) at the level of the banking sector is 213.8%. At the end of 2022, all banks met the LCR requirements, and the majority of them significantly above the required regulatory minimum[25]. At the end of 2022, net stable funding ratio (NSFR) was 163.5%, and all banks in the system recorded a significantly higher value of the indicator than the required minimum of 100%. The short-term liquidity shock in the first quarter of 2022 resulted in a drop in the LCR ratio by 18 percentage points, to the level of 198.8%, in the first quarter of 2022. Already from the second quarter, the value of the LCR indicator began to rise again, and one year after the liquidity shock, the value of the LCR recorded a significant increase and reached a level of 242.7%.

24 *Implicit net interest margin is the ratio of net interest income to average interest-bearing assets. The average interest-bearing assets, at the end of the fourth quarter, were calculated as the balance average of interest-bearing assets from the end of previous year fourth quarter and of the current year fourth quarter.*

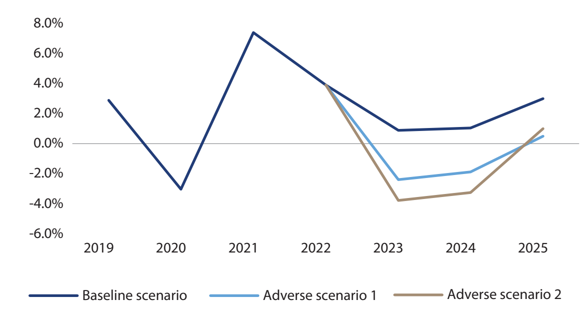
25 *In accordance with the Decision on Bank Liquidity Risk Management ("Official Gazette of FBH", 39/21), and the Decision on Liquidity Risk Management ("Official Gazette of the RS", 62/21), the minimum liquidity coverage ratio is 100%.*

Text Box 5: Solvency stress tests

The solvency stress test based on data from the end of 2022 was performed in a period when macroeconomic data undoubtedly confirmed the economic recovery in the past year, while at the same time there is a strengthening of uncertainty regarding future economic developments in the medium term. Accordingly, macroeconomic scenarios were created assuming the macroeconomic shocks, which are likely to materialise due to the present economic uncertainties and risks. The results of the stress tests of BH banking sector indicate that the accumulated excess capital is sufficient to absorb the assumed shocks even in adverse scenario 2, so that in the time horizon of the stress tests in the next three years, capitalisation at the sector level remained above the regulatory minimum of 12%.

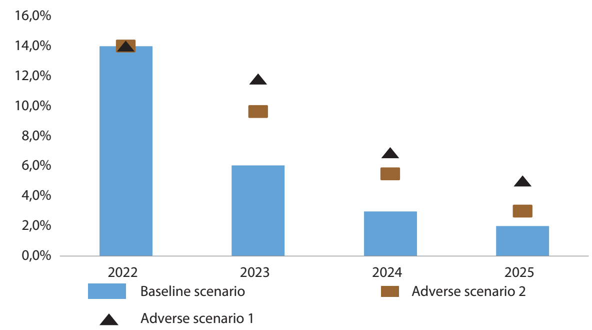
The solvency stress test in the time horizon from 2023 to 2025 is performed using three different scenarios, the baseline and two adverse scenarios. The scenarios and assumptions for stress testing are based on current geopolitical events in the world, and their implications for the global economy and the economy in Bosnia and Herzegovina, as well as the expected implications for the banking sector in BH. The scenario calibration includes projections of macroeconomic and financial variables - such as real GDP, inflation, credit growth, interest rates on loans to households and legal entites, and real estate prices (Table TB 5.1).

TB 5.1: Real Growth of GDP



Source: CBBH

TB 5.2 : Inflation Rate



Source: CBBH

Table TB 5.1: Main Assumptions in Baseline and Adverse Scenarios

	2022	Baseline scenario			Adverse scenario 1			Adverse scenario 2		
		2023	2024	2025	2023	2024	2025	2023	2024	2025
Macroeconomic trends										
Real GDP	3.9	0.9	1.0	3.0	-2.4	-1.9	0.5	-3.8	-3.2	1.0
Personal consumption	4.9	-0.5	2.2	2.5	-2.7	-0.1	0.3	-3.7	-1.2	0.6
Gross investments	13.5	6.9	8.6	6.5	2.2	3.9	2.0	0.3	1.2	1.7
Export of goods and services	24.6	1.5	5.9	7.0	-6.8	3.8	5.5	-12.6	4.3	5.0
Import of goods and services	24.0	2.9	9.4	6.5	-2.6	7.7	4.4	-6.5	7.7	3.5
Inflation (%)	14.0	6.1	3.0	2.0	9.6	5.5	3.0	11.8	6.9	5.0
Real estate prices	16.8	6.5	2.5	2.5	6.1	1.6	0.0	6.2	1.7	-1.0
Conditions on the financial market										
Interest rates for households (%)	5.1	6.8	6.5	6.3	7.1	7.3	7.1	7.6	7.9	7.9
Interest rates for corporates (%)	3.4	4.7	4.5	4.3	5.4	5.5	5.4	5.7	5.8	5.8
Household credit growth	5.2	5.4	5.5	7.0	1.8	2.0	4.7	0.3	0.5	2.5
Corporates credit growth	4.4	3.7	3.8	4.8	1.0	1.5	3.0	-1.3	0.5	1.8

Source: CBBH

Note: Data for the macroeconomic trends and credit growth is the annual rate of the change presented in percentage.

The baseline scenario isderived from CBBH November 2022 macroeconomic projections, and the key factors affecting the projections of the main macroeconomic variables are the external shock, i.e. the war in Ukraine, which caused the energy crisis in Europe, the rise in energy and food prices, and the strengthening of dollar against the euro. Following the stronger than expected economic growth in BIH in 2022 in conditions of growing inflation and deteriorating monetary conditions, the baseline scenario assumes a slowdown in economic activity in 2023 due to continued inflationary pressures as well as a slowdown in the economic growth of BH's main trading partners, which will negatively affect the volume of foreign trade (Table TB 5.1). By the end of the stress test time horizon, along with the weakening of inflationary pressures, a gradual recovery of economic activity and real GDP growth at the annual level of 3.0% in 2025 is expected. The tightening of monetary policy and the raising of the reference interest rates of the leading central banks will be reflected in a significant increase in interest rates in the BH banking sector in 2023 and 2024. The growth of interest rates will contribute to the slowdown in credit activity in the next two years, followed by a gradual recovery in 2025. Slowed economic activity will result in the decline in demand for residential real estate, especially in 2024, caused by the continuous decrease in household disposable income, which will also result in a slower growth in real estate prices.

Adverse scenarios are based on the assumption of an additional escalation of the already present disruptions in global supply chains, which would result in further, strong growth in energy and food prices, both on the world and domestic markets. The supply shock would lead to the continuation of the rise in the prices of most raw materials on world markets, which would be reflected in the rise in domestic prices of food and energy, especially the prices of oil derivatives and gas, given the absolute dependence on the import of these products. After extremely strong inflationary pressures in 2022, the adverse scenarios assume the continuation of high inflationary pressures throughout the stress testing period, with slightly lower inflation rates expected in the second and third years of the stress testing. The scenarios further assume that the European Central Bank (ECB) will continue to raise key interest rates in response to rising consumer prices. The assumed, significant increase in domestic interest rates is influenced by assumptions about the movement of ECB reference interest rates, and an increase in the country risk premium of 200 basis points in adverse scenario 1, i.e. 350 basis points in adverse scenario 2. The rise in interest rates would deepen the negative effect on the domestic GDP caused by the aggregate supply shock, and lead to a strong contraction of economic activity in 2023 and 2024 in both adverse scenarios with a slight recovery in 2025. In adverse scenarios, the materialisation of systemic risks in the real estate market is also assumed, where in 2024 a significant drop in demand for real estate is expected due to a continuous decrease in the disposable households income, which affects downward corrections in real estate prices until the end of the stress testing time horizon.

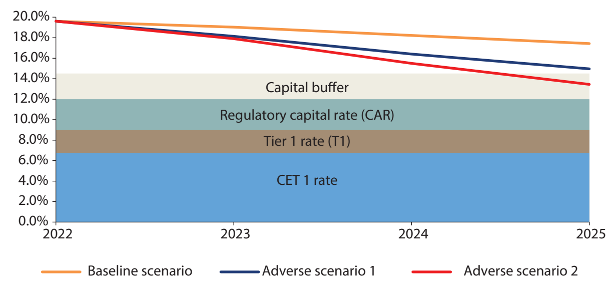
The impact of stress tests on the capital adequacy ratio was quantified based on the initial balance as of 31 December 2022. starting poing capital adequacy ratio for banking sector is 19.6%, with all banks in the system recording very high capitalisation. Given the high level of capitalization, despite the expected deterioration in the quality of the credit portfolio and lower profitability, the banking sector showed a high degree of resistance to the shocks assumed in the baseline scenario. The capital adequacy ratio would decrease to 17.4%, whereby all banks in the system would maintain a capital adequacy ratio above the regulatory minimum, however, in order to absorb unfavourable macroeconomic trends by the end of 2025, two banks, will deplete excess capital and slightly encroach on the capital conservation buffer [26].
The stress testing results showed the resilience of the banking sector to the presumed deterioration in macroeconomic and financial conditions from the adverse scenario 1, whereby accumulated capital surpluses have a key role in absorbing the unfavorable effects of macroecnomic developments, and maintaining the banks' capital adequacy indicators significantly above the minimum regulatory requirements (Graph TB 5.3). In individual banks results, in adverse scenario 1, after the second year of stress testing, two banks would not maintain the capital adequacy ratio within the minimum regulatory requirements, while in the third year, two more banks would show the need for additional capital. The share of assets of these four banks in the total assets of the banking sector at the end of 2022 was 11.6%. If we take into account the minimum regulatory capital requirements at the system level, recapitalisation needs in a milder adverse scenario amount to KM 72 million, and the capital adequacy ratio would be 14.9% at the end of the stress test time horizon. When absorbing the assumed shocks in a adverse scenario 1, a total of six banks in the system would not be able to maintain a capital conservation buffer until the end of the stress test time horizon.

In case of materialisation of even stronger shocks from adverse scenario 2, assuming a strong contraction of economic activity, the capital adequacy ratio at the system level would decrease to 13.4%. Although the capitalisation ratio would remain above the regulatory minimum of 12%, the assumed strong contraction of

[26] *According to the valid Decisions on the calculation of capital, banks are obliged to maintain a capital protective layer in the form of common equity Tier 1 in the amount of 2.5% of the total amount of risk exposure. The capital protective layer is added to the common equity Tier 1 rate of 6.75%, and cannot be used to maintain the Tier 1 and total capital rates. Maintaining the required capital protective layer is a condition for the payment of dividends for banks.*

economic activity in the first two years of the stress test would lead to the gradual depletion of the accumulated excess capital at the system level, i.e. the capital conservation buffer until the end of the time horizon. The results of the analysis by individual banks show that in thirteen banks in the system, the capital conservation buffer will be exhausted by the end of the time horizon of the stress test. After the second year of stress testing, there are three banks that do not meet the minimum regulatory capital requirement of 12%, and by the end of 2025, two more banks would need additional capital to meet the minimum capital requirements. The total recapitalisation needs at the level of the banking sector by the end of the third year of testing would amount to KM 130 million, which is 0.3% of the gross domestic product in 2022.

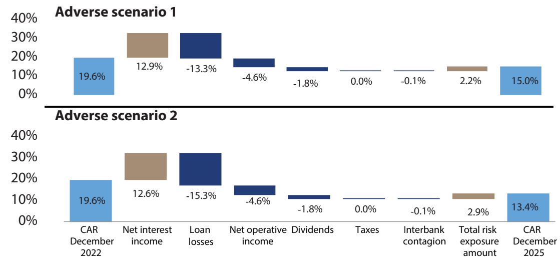
TB 5.3: Capital Adeqacy Ratios in Baseline and Two Adverse Scenarios and Minimum Regulatory Capital Requirements



Source: CBBH

Graph TB 5.4 shows the contribution of individual positions of the balance sheet and income to the change in the capital adequacy ratio at the system level, cumulatively, in adverse scenarios, in the period from the end of 2022 to the end of 2025. The decline in banking sector capitalisation in both adverse scenarios is primarily the result of increasedcredit risk losses arising from financial asset items, primarily the credit portfolio of the corporate and household sectors. Capitalisation is also affected by the decrease in net operating income compared to the end of 2022. On the other hand, net interest income has a key positive contribution to maintaining capital adequacy, of 12.9% percentage points in the adverse scenario 1 and 12.6% percentage points in the adverse scenario 2, regardless of the slight decrease until the end of 2025. Also, the assumption of dividend payment in all three periods of stress testing as well as in all three scenarios additionally affects capitalisation during stress. The impact of interbank contagion in the system on the capitalisation of banks is not significant for the time being.

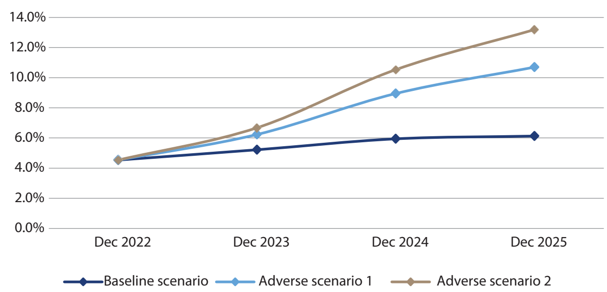
TB 5.4: Impact of Individual Positions on CAR in Both Adverse Scenarios



Source: CBBH

During 2022, the improvement of the quality of assets at the system level continued, which is reflected in the reduction of non-performing loans relative to total loans to the level of 4.5%, which is the result of a reduction in the amount of non-performing loans and a gradual recovery of credit activity both in the corporate and the household sectors. Despite the continuous improvement of asset quality indicators, the results of stress tests indicate that the quality of the credit portfolio is very sensitive to changes in macroeconomic conditions, and already in the baseline scenario, the quality of the credit portfolio deteriorates in all three years of testing. Thus, the share of non-performing loans in total loans at the system level could increase from 4.5% at the end of 2022 to 6.1% by the end of 2025. In both adverse scenarios, a significant increase in non-performing loans is expected until the end of the stress test time horizon, which is influenced by the assumed strong growth of inflation, contraction of economic activity and a significant increase in interest rates. Projected growth in non-performing loans is evident in both the corporate and household sectors, with NPL growth being stronger in the corporate sector.

TB 5.5: Share of Non-performing in the Total Loans



Source: CBBH

Text box 6: Liquidity stress tests

The top-down macro liquidity stress test is performed on a quarterly basis and is an integral part of the macro-prudential tool for detecting liquidity risks at the banking sector level, as well as potential liquidity needs in the event of a financial crisis. The calculation of the liquidity position under assumed conditions of significant stress in three alternative adverse scenarios in a 30-day time period is based on the approach of the standardised measure of the liquidity coverage ratio (LCR), which is an integral part of the new regulations for liquidity risk management which requires banks to maintain ratio of at least 100%. Based on the results of the liquidity stress test as of 2022, as well as a comparison with the results of the stress tests for the first three quarters of 2022 and the end of 2021, the BH banking sector can be assessed as quite resistant to liquidity shocks and shocks on the side of funding sources assumed in alternative scenarios, and the strengthening of the liquidity position of most banks in the sector after the short-term liquidity shock from the first quarter of 2022 is evident. These findings of stress testing are primarily a result of the good liquidity position of all banks in the sector and high LCR coefficients, which at the end of 2022 ranged from 159% to very high 900%.

The shocks in the liquidity stress test were calibrated using expert assessments in the CBBH in the form of three alternative adverse scenarios. The first stress scenario assumes a shock on the part of the household sector and is based on a historical event, namely the global financial crisis in the period 2008-2009, which resulted in a short-term loss of confidence in BH banking sector and consequently in withdrawal of a significant part of the household deposits. The second stress scenario illustrates a hypothetical systemic crisis of liquidity in the country, in which the greater intensity of the funding source stress for banks would come from the corporate sector. The third, combined stress scenario is an adverse scenario that assumes a combination of shocks from the previous two scenarios, with elements of idiosyncratic shocks, such as large withdrawals of deposits, larger than expected withdrawals of approved credit lines, and stress on the financial market reflected in a large decline in the value of all securities held as liquid assets. The assumed shocks in this scenario are about two to three times stronger than the requirements according to the LCR regulation, and the goal of this scenario is to identify even the smallest weaknesses in banks' liquidity positions.

The change in net liquidity outflows through the three assumed scenarios is the result of larger liquidity outflows, while total inflows were kept at the same level in all three scenarios. The total value of the outflow of liquid assets in different scenarios, as well as the change in the structure in terms of the contribution of different categories of outflows to their total value, differs by scenario. Also, according to the scenarios, a different level of stress on the financial markets is assumed (Table TB 6.1).

Table TB 6.1: Calibration of the Scenario in Liquidity Stress Test

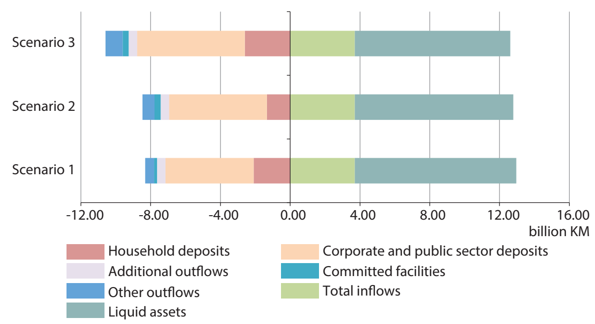
		LCR parameter	Assumptions for scenario 1	Assumptions for scenario 2	Assumptions for scenario 3
Outflows	**Household deposits**				
	Deposits with higher outflow rates				
	Category 1	15%	20%	15%	30%
	Category 2	20%	30%	20%	40%
	Stable deposits	5%	10%	5%	10%
	Other household deposits	10%	15%	10%	20%
	Operational deposits				
	Covered by insurance system	5%	5%	10%	10%
	Not covered by insurance system	25%	25%	30%	35%
	Non-operational deposits				
	Covered by insurance system	20%	20%	25%	30%
	Not covered by insurance system	40%	40%	45%	50%
	Committed lines				
	towards physical persons	5%	5%	10%	10%
	towards legal entites	10%	10%	20%	20%
	towards financial clients	40%	40%	50%	60%
	Other products and services				
	Off balance liabilities	5%	5%	10%	15%
	Unsed loans and advance payments to bi	10%	10%	20%	30%
	Credit cards	5%	10%	5%	15%
	Account overdrafts	5%	10%	5%	15%
	Off balance products from trade financing	5%	5%	10%	15%
Liquid assets	**Liquid assets of level 1**				
	Assets of centaral govermment	100%	100%	95%	90%
	Assets of regional and local communities	100%	90%	85%	80%
	Liquid assets of level 2				
	Debt securities of comparies	50%	50%	30%	25%

Note: We selected the phositions with the stress parameters different than LCR parameters.

According to the results of stress testing conducted on the database from the end of 2022, in the first two scenarios, all banks managed to absorb intense stress within 30 days. Although none of the banks would fully exhaust their liquidity buffer, two banks in the first and four banks in the second scenario would need to use more than 70% of their liquid assets to cover net outflows after the shock. According to the assumptions from Scenario 3, one bank in the sector would not absorb the liquidity and funding stress for a period of 30 days without additional liquid assets, while several more banks would need to use a significant part of their liquid assets to cover net outflows after the shock. Considering that this is an extremely strong adverse scenario in which shocks from the household and corporate sectors are combined, which, in addition, are of a stronger intensity than they were individually in the other two scenarios, it can be considered that the banks have absorbed well to the greatest extent assumed shocks, wherein one of the larger banks in the sector would fully exhaust its liquid assets to cover net outflows in the assumed stress.

Considering that the assumptions of changes in net liquidity outflows have a dominant influence on the stress test results, the Graph (TB 6.1) shows the changes in the basic components of LCR in each of the assumed scenarios. The left side of the chart shows expected liquidity outflows, in order to clearly show the total value of outflows in different scenarios, as well as changes in their structure in terms of the contribution of different categories of outflows to their total value. The right side of the graph shows total inflows expected at the same level in all three assumed scenarios, and changes in liquid assets through different scenarios.

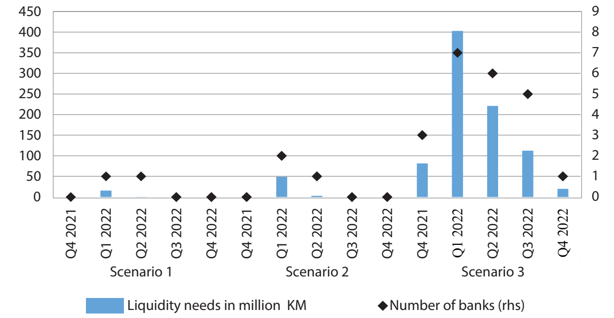
Graph TB 6.1: Basic LCR Components, Q4 2022



Source: CBBH

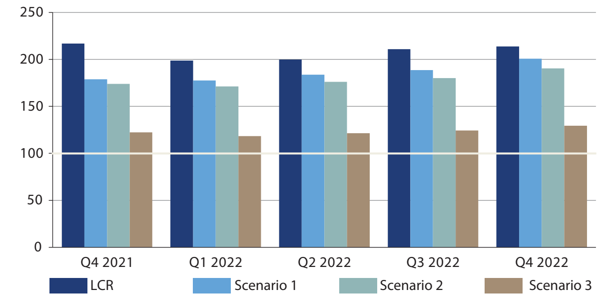
Given that identical scenarios were used in the stress tests for the previous four quarters, it is possible to compare the results across periods. Considering the total needs of banks for additional liquid funds according to the stress tests carried out from the fourth quarter of 2021 (Graph TB 6.2), it is evident that after the short-term liquidity shock from the first quarter of 2022, connected with the sanctions against banks from the Sberbank group, the resilience of banks to the shocks assumed in the stress test scenarios increased in the following quarters. The LCR for the banking sector remained significantly above the regulatory minimum in each of the quarterly stress tests, and this coefficient at the banking sector level would amount to 129.4% after the assumed stress in Scenario 3 and it is slightly higher compared to the LCR in the same scenario in the previous stress tests (Graph TB 6.3).

Graph TB 6.2: Total Liquidity Needs in Banking Sector



Source: CBBH

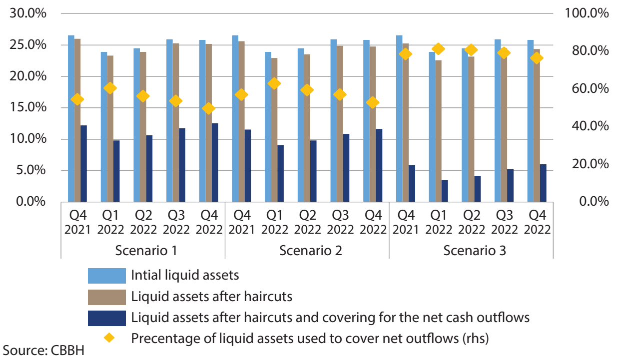
Graph TB 6.3: Liquidity Coverage Ratio (LCR) for Banking Sector



Source: CBBH
Note: In alternative stress test scenarios, total expected cash inflows are not a subject of cap of 75% of liquidity outflows as in LCR.

The initial level of the liquid assets is expressed as a precentage of initial amount of total assets, which at the end of 2022 averaged at 25.8% for B&H banking sector. Following the liquid assets after stress throughout all three described scenarios, it is evident that the values maintained the level slightly lower compared to initial level of liquid assets, which totally corresponds with the anticipated intensity of the shock, which is primarily reflected on the liquid assets of level 1, as the most represented position in all banks which compose the country's banking sector. The level of the liquid assets after stress and the covering for net outflow of cash in all three scenarios with the same trend significantly decreases compared to initial level of liquid assets underlining its importance as a liquidity buffer in periods of stress. The percentage of liquid assets used to cover net outflows on the B&H banking sector level is almost equal in the first two scenarios of stress testing, while the same ratio in the third combined scenario is significantly higher and stands at 80% for the B&H banking sector, implying that larger number of banks are at the minimum level of liquid assets or have completely exhausted its liquid assets, which is however expected taking into account the intensity of the assumed shocks anticipated within this scenario (Chart TB 6.4).

Graph TB 6.4: Banking Sector Liquid Assets



Source: CBBH
Note: Liquid assets are expressed in % of total inital assets.

5.2. Non-banking financial sector

The non-banking financial institution sector is a poorly developed segment of the financial market, with a very modest share in the total assets of financial intermediaries (Table 5.1). A moderate growth of the balance sheet and profitability indicators was recorded in the microcredit and leasing sector. The largest and most significant segment of the non-banking financial sector remains insurance and reinsurance companies, which record moderate business growth measured by the increase in charged premiums in both categories of insurance, life and non-life. In 2022, due to greater debt of entity governments, there was a significant increase in turnover on the primary market of both BH stock exchanges, while in other segments of the market no significant increase in turnover was recorded on both stock exchanges.

The operations of the microcredit sector in 2022 are characterised by: moderate growth in assets, growth in gross loans, capital increase, accompanied by the decreased value of delayed loans, and growth in profitability. At the end of 2022, 27 microcredit organisations (MCO) were operating in BH, of which 15 were microcredit companies (MCC) and 12 were microcredit foundations (MCF). The total assets of the microcredit sector at the end of 2022 increased by 9.2% compared to 2021, while loans recorded a growth of 9.7% (Table 5.2). Out of the total amount of microcredits, 98.3% was extended to individuals, the agriculture sector financing remaining primary (31.2%), followed by the financing of housing needs (7.1%), and the service sector (5.9%). Loans granted to all other sectors account for 31.4% of total loans to individuals.

Table 5.2: Simplified Balance Sheet of Microcredit Organisations (million KM)

Assets			Liabilities		
	2021	2022		2021	2022
Cash	92.8	97.3			
Loans	962.6	1,056.2	Liabilities based on loans	605.3	667,8
Loan loss provisions	-12.3	-11.5	Other liabilities	69.7	72.9
Other assets	119.2	126.7	Capital	487.2	528.1
TOTAL	1,162.3	1,268.7	TOTAL	1,162.3	1.268.7

Source: FBA and BARS, CBBH

At the end of 2022, loans with a delay in repayment of more than one day participate with 0.7% in total loans, and their share has decreased compared to the previous year. Provisions for loan losses at the sector level amounted to KM 11.5 million. In the structure of liabilities, the loan liabilities are the main source of MCO's funds and recorded a growth of 10.3% compared to the previous year.

In the term structure of the microcredit portfolio, long-term microcredits take the largest share with 93.7%. Following a significant improvement of maturity structure of sources of funds in 2020, when most short-term loan liabilities were replaced with long-term loans, the same trend continued in 2022. The total capital of the sector at the end of 2022 was KM 528 million and recorded an increase of 8.4% compared to the previous year. In the capital structure of the MCO sector, the capital of microcredit foundations accounts for 56.2%, while the capital of microcredit companies accounts for 43.8% of the total capital of the sector. In 2022, the capital of microcredit foundations and companies grew at rates of 4.8% and 13.4%, respectively. The main source of capital of the MCF is the excess of income over expenses, which at the end of the year amounted to 243.2 million KM, or 82% of the total capital of foundations. Similarly, as in the case of MCF, the dominant influence on the growth of the capital of microcredit companies was the growth of generated profit during the year, so that at the end of 2022, retained earnings made up 53.1% of the total capital of MCC, followed by the share capital that participates with 39.1 % in the capital structure of microcredit companies.

At the end of 2022, the microcredit sector achieved a positive financial result in the amount of KM 37.3 million. The total income amounted to KM 210.6 million, which is 8.7% higher than in the previous year. In the structure of MCO income, interest income is still the dominant source of the sector's income, and thanks to the growth of credit activity, an increase in income based on interest and fees was achieved by 9.4% in 2022. The average weighted effective interest rate on total microcredits in the FBH in 2022 was 23.30%, and in RS 33.6%. Interest rates in the microcredit sector of both entities were at approximately the same levels until the end of 2020. However, since the first quarter of 2021, a significant increase in average interest rates has been recorded in Republic of Srpska (RS), due to a continuous increase in average rates on short-term loans of very small amounts (up to KM 400). The total expenses of the microcredit sector amounted to KM 170.2 million and recorded an increase of 7.3% compared to the previous year. The strongest influence on the growth of total expenses was the growth of operating expenses, which were higher by 10.6% compared to the previous year.

In 2022, the volume of business in the leasing sector remained very modest and, despite the achieved growth in the balance sheet and generated profit, the share of this sector in the assets of financial intermediaries is still extremely low. At the end of 2022, four leasing companies had operating licences. The total assets of the leasing sector amounted to KM 437.04 million and recorded a growth of 16.9% compared to the previous year. Financial leasing accounts for 84% of the leasing contract value, and operating leasing accounts for the remaining 16%. The value of newly concluded financial and operating leasing contracts in 2022 was KM 264.7 million, which is 23.5% more than the previous year. At the end of 2022, the leasing sector achieved a positive financial result in the amount of KM 8.9 million, which is an increase of 4 million KM. The profitability growth in 2022 in the leasing sector is the result of the growth of total revenues with a slightly lower growth of total expenses. The growth of interest income contributed the most to the increase in profitability, and the most significant position of interest income is income based on interest on financial leasing in the total amount of KM 13.6 million, which is higher by 15.8% than in the previous year. The leasing sector in BH is underdeveloped, and the basic activities of this sector represent a kind of substitution for standard bank loans, mostly to legal entities, bearing in mind that lease financing for individuals is less favourable compared to bank loans due to the obligation of paying VAT on interest.

There was an increase in activity on the insurance market compared to the previous year. As in the previous year, 25 insurance companies and one reinsurance company were operating in Bosnia and Herzegovina at the end of 2022. The trend of insurance premium growth from previous years (with the exception of 2020) continued, and the total calculated premium amounted to KM 881.1 million, and it grew at a rate of 7.7% compared to the previous year, while the share of the premium in the total GDP is 5.2%. Of the total calculated premium, non-life insurance accounts for 80.4%.

Low level of voluntary types of insurance continues to be a key weakness and limiting factor in the development of the insurance market in Bosnia and Herzegovina. The most significant share in the total insurance premium is still held by car liability insurance (62.8%). Growth was recorded in all categories of non-life insurance. The calculated life insurance premium amounted to KM 188 million and recorded an increase of 7.6% compared to the previous year. The total gross paid damages amount to KM 427.2 million and make up 48.5% of the total calculated premium.

In 2022, 32 investment funds had operating licences, of which 18 in FBH and 14 in RS. Out of a total of 32 investment funds, 21 are open investment funds, while 11 funds are closed investment funds. The total value of net assets of investment funds at the end of 2022 amounted to KM 1.06 billion and is higher by KM 122.3 million or 12.9% compared to the end of the previous year.

Total turnover on the BH stock exchanges in 2022 significantly increased, given that governments, as the main drivers of activity on the primary market of debt instruments, borrowed more. Total turnover on BH stock exchanges amounted to KM 1.07 billion and compared to the same period in the previous year, it recorded a significant growth of 53.4%. An increase in turnover was recorded on both domestic stock exchanges, and a more significant increase was recorded on the BLSE than on the SASE. Of the total turnover on the Sarajevo Stock Exchange (SASE), KM 383.7 million, or 35.8%, was realised, and on the Banja Luka Stock Exchange (BLSE), KM 688.4 million, or 64.2%. The total market capitalisation in Bosnia and Herzegovina at the end of 2022 is KM 10,716.7 million, and compared to the previous year it is 10.7% higher. The increase in market capitalisation on SASE amounted to KM 462.2 million (8.3%), while the increase in market capitalisation on BLSE amounted to KM 571.6 million (13.8%) compared to the end of 2021. In other segments of the capital market on both stock exchanges, there was no significant increase in turnover compared to the previous year.

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FINANCIAL INFRASTRUCTURE

6. FINANCIAL INFRASTRUCTURE

6.1. Payment systems

In 2022, the Central Bank of BH successfully fulfilled its legal obligation to maintain adequate payment systems. Payment transactions were carried out smoothly through giro clearing and real-time gross settlement (RTGS) systems. The Central Registry of Credits (CRC) and the Single Registry of Business Entities' Accounts (SRBEA) were maintained, and the execution of transactions through the international clearing of payments with foreign countries proceeded smoothly. Since 2019, the giro clearing system has been harmonised with the operating procedure in the European Union (EU), one of the prerequisites for the integration of the CBBH payment systems into the payment systems in the EU thus being fulfilled.

During 2022, an increase in the number of transactions and the total value of all transactions through giro clearing and RTGS payment systems was recorded. The total value of interbank payment transactions is higher by 19.1% in 2022. The total number of transactions is higher by 3.6% compared to the previous year. In 2022, the first ten banks in BH by volume of transactions participated in the total number of RTGS and giro clearing interbank transactions with 75.24%, a modest increase (2.3%) compared to the previous year. On the other hand, the participation of the first ten banks in the total value of transactions decreased from 75.20% in 2021 to 74.55% in 2022.

The increase in the value of total payment transactions in 2022 and the faster circulation of money led to a decrease in the number of days needed to carry out transactions worth the annual nominal GDP (Table 6.1). The number of intrabank transactions increased by 4.3% and interbank transactions by 3.6% compared to the same period of last year, and intrabank transactions remained predominant in the total number of transactions with 54.2% (58.7 million transactions). The value of intrabank transactions in 2022 was KM 128.1 billion or 47%, while the value of interbank transactions was KM 145.8 billion or 53%.

Table 6.2. shows the values of the Herfindahl-Hirschman index (HHI[27]), which illustrates the concentration of the total number and value of interbank payment transactions for the 10 banks with the largest shares in both payment systems (giro clearing and RTGS). Although the majority of interbank payment transactions take place between a smaller number of large banks, the values of the HHI index indicate a moderate concentration of interbank payment transactions and the absence of systemic risks in payment systems. If the concentration of interbank payment transactions in the 10 largest banks is analysed, whereby banks from the same group are viewed as one bank, the concentration index only slightly increases, still indicating a moderate concentration.

Table 6.1: Interbank Payment Transactions

Year	The total number of transaction, in million	The total turnover, million KM	Average daily turnover, million KM	GDP/ average daily turnover
2005	22.9	36,195	140.3	122
2006	24.9	47,728	185.0	104
2007	28.4	60,193	234.2	93
2008	29.6	70,345	272.7	91
2009	29.0	64,458	251.8	95
2010	31.8	67,779	263.7	94
2011	32.5	76,653	298.3	87
2012	33.8	81,533	318.5	81
2013	35.8	76,605	298.1	88
2014	37.9	87,859	341.9	79
2015	39.1	85,106	326.1	87
2016	40.0	88,380	338.6	86
2017	41.1	96,243	370.2	85
2018	42.3	102,670	393.4	83
2019	43.6	123,046	471.4	74
2020	43.8	105,132	398.2	85
2021	48.0	122,403	470.8	79
2022	49.7	145,825	583.3	78

Source: CBBH, BHAS

Table 6.2 Concentration of the Transactions in Interbank Payment System (HHI)

Period	10 banks with the largest shares	
	Number of transactions	Value of transactions
December 2008	1,271	1,381
December 2009	1,233	1,413
December 2010	1,256	1,346
December 2011	1,230	1,287
December 2012	1,278	1,295
December 2013	1,337	1,378
December 2014	1,350	1,310
December 2015	1,314	1,305
December 2016	1,307	1,322
December 2017	1,320	1,349
December 2018	1,344	1,335
December 2019	1,397	1,471
December 2020	1,352	1,249
December 2021	1,373	1,264
December 2022	1,397	1,266

Source: CBBH

27 *HHI is a measure of concentration and is calculated as the sum of the squares of individual share in the observed segment. An index below 1,000 points indicates non-concentration, from 1,000 to 1,800 points moderate concentration, from 1,800 to 2,600 points high concentration, over 2,600 is considered very high concentration up to a maximum of 10,000 when the concentration is monopolistic.*

In 2022, the CBBH continued maintaining the Central Registry of Credits of Business Entities and Natural Persons (CRC), which provides financial institutions - users of this database with data on the credit history and current debt of their existing or potential clients, thus enabling them to better assess risks when making decisions on extending funds.

The CBBH also continued maintaining the Single Registry of Business Entities' Accounts in BH, which included 250,100 active and 101,711 blocked accounts at the end of 2022. After the system upgrade in late 2018, SRBEA contains all accounts of business entities that perform payment transactions in BH through accounts opened with banks and the CBBH. SRBEA primarily benefits commercial banks, tax authorities, administrative authorities, law enforcement authorities and other levels of government in detecting financial structures and transactions that companies and individuals can exploit in an illegal manner, e.g. for tax evasion, money laundering, etc. The Registry also provides information to all legal and natural persons who have to seek the enforced collection of their claims through authorised institutions.

The international clearing of payments between banks from BH and the Republic of Serbia continued in 2022 and a total of 10,395 payment orders worth 288.1 million euros were executed through the system, indicating an active use of this platform for the settlement of payment transactions.

6.2. Regulatory framework

As a continuation of the BH regulatory framework harmonisation with the EU regulatory framework, the BH Deposit Insurance Agency made a decision to increase the amount of insured deposits with banks from KM 50,000 to KM 70,000. By implementing this decision, which entered into force on 1 November 2022, BH continues to approach EU standards in the field of deposit protection, which contributes to strengthening trust in the banking sector, as well as overall financial stability in the country.

In the first half of 2022, the banking agencies repealed the Decisions on temporary measures of banks to mitigate the negative economic consequences caused by the corona virus pandemic. On the other hand, due to inflationary pressures and the growth of macroeconomic risks accompanied by the growth of interest rates on the international market, in the second half of the year the banking agencies adopted Decisions on temporary measures to mitigate the risk of interest rate growth in BH[28]. The main goal of these decisions is the timely management of credit risk, the protection of users of financial services and the preservation of the banking system stability. The decisions envisage the formation of additional reserves for expected credit losses for credit risk levels 1 and 2 for which a significant increase in credit risk (SICR) is determined, which is caused by an increase in interest rates in the amount of 200 bp or more; and mitigating the consequences of a potentially significant increase in the amount of debt repayment through the modification of the exposure for which the status of non-payment of obligations has occurred due to a significant increase in interest rates. The decisions determined that a significant increase in the interest rate is an increase in the nominal or effective interest rate, for an individual credit exposure of 200 or more basis points relative to the applicable corresponding interest rate for the given exposure on the reference date, i.e. 30 June 2002. At the end of April 2023, both Banking Agencies adopted amendments to these Decisions, which defined that banks cannot determine expected credit losses in the amount of less than 2% of exposure for credit risk level 1. The Decisions also aim at further stimulating banks to find a way to maintain interest rates at reasonable levels, in order to avoid negative consequences for the economy and the population.

The CBBH, together with the Entities Banking Agencies, as part of the Coordination of Banking Supervision, adopted the Methodology for calculating the reference rate for average weighted banks' funding cost for the banks operating in BH, at the end of June 2023[29], which was published on the website of the Central Bank of Bosnia and Herzegovina. The Methodology was developed with the aim of determining the real costs of financing the domestic banking sector, since it was estimated that the harmonisation of active interest rates with the costs of financing in foreign markets, in circumstances of strong growth in reference interest rates, could lead to disruptions in the domestic banking market. By using these rates in the case where financing is mainly secured from domestic sources, banks would be able to better manage the interest-induced credit risk, thus mitigating the risks to the overall financial stability, improving the functioning conditions of the internal market and ensuring a higher level of protection of users of financial services and investors.

In order to mitigate the risks arising from the international environment, at the beginning of the second quarter of 2023, both banking agencies made the decisions on temporary measures to limit the exposure of banks to central governments or central

28 *Decision on temporary measures to mitigate the risk of interest rate growth ("Official Gazette of the FBH ", 79/22) and Decision on temporary measures to mitigate the risk of interest rate growth ("Official Gazette of RS", 98/22).*

29 *Methodology for calculating the reference rate of the weighted average cost of financing banks operating in Bosnia and Herzegovina published on the CBBH website https://www.cbbh.ba/content/read/1120.*

banks outside BH to a maximum amount of 100% of the regulatory capital[30]. Banks are obliged to comply with the decisions made by the beginning of the third quarter of 2023. These decisions are of a temporary nature and shall apply until 31 December 2024.

In the field of bank rehabilitation, in 2022, Methodologies for determining the minimum requirement for own funds and eligible liabilities (MREL) were adopted by domestic regulators. The Methodology prescribes the method of determining the minimum capital requirement, which is calculated as a percentage ratio of the sum of regulatory capital and acceptable liabilities to the sum of regulatory capital and total liabilities of the bank. The Banking Agencies determine for each bank individually the MREL requirement, which the bank is obliged to continuously fulfil on an individual basis, that is, on a consolidated basis, if so ordered. At the end of March 2022, Decisions on amendments to the decision on bank and banking group recovery plans were adopted, which included additional indicators of the recovery plan, including the minimum requirement for the bank's capital and eligible liabilities (MREL) as well as new liquidity indicators[31]. According to the Decisions, liquidity indicators must at least include an indicator of maturity compliance of financial assets and liabilities up to 30 days, the liquidity coverage ratio (LCR), the net stable funding ratio (NSFR) and the ratio of funds above the required reserve and the required reserve.

Entity ombudsmen for the banking system, which are members of both banking agencies, signed a memorandum of cooperation in May 2022. The goal of signing the memorandum is to improve the conditions for cooperation in the areas of promoting and protecting the rights of users of financial services, which will contribute to the preservation of the economy and the standard of living of citizens.

In early 2022, the banking agencies successfully implemented the restructuring process over Sberbank a.d. Banja Luka and Sberbank BH d.d. Sarajevo. The company ASA FINANCE d.d. Sarajevo took ownership of Sberbank BH d.d. Sarajevo, and from May 2022 this bank continued to operate under the name ASA Banka Naša i snažna d.d. Sarajevo. At the end of 2022, the aforementioned bank was merged with ASA Banka d.d. Sarajevo, which resulted in the reduction of the number of banks in the banking sector in BH to 21 banks. Upon completion of the successful restructuring process in May 2022, Sberbank a.d. Banja Luka came under ownership of Nova Banka a.d. Banja Luka, and continued its operations under the name Atos Bank a.d. Banja Luka. Change of ownership of Komercijalna banka a.d. Banja Luka, which was carried out at the end of 2021, resulted in the official change of the business name of this bank in March 2022 to Banka Poštanska štedionica a.d. Banja Luka in accordance with the name of the new owner Banka Poštanska štedionica a.d. Belgrade.

[30] *Decision on temporary measures to limit bank exposure (Official Gazette of FBH, 26/23) and Decision on temporary measures to limit bank exposure (Official Gazette of RS, 35/13).*

[31] *Decision on Amendments to the Decision on Bank and Banking Group Recovery Plans (Official Gazette of FBH, 26/22) and Decision on Amendments to the Decision on Bank and Banking Group Recovery Plans (Official Gazette of RS, 35/23).*

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STATISTICAL APPENDIX

Table A1: Real Estate Price Index (2015=100)

		Sarajevo	Mostar	Zenica	Tuzla	Banja Luka	Bijeljina	Trebinje	TOTAL
2004	Q1	58	71	47					60
	Q2	58	70	46					59
	Q3	58	70	47					59
	Q4	59	68	46					60
2005	Q1	61	66	48					61
	Q2	61	70	47					61
	Q3	63	67	47					62
	Q4	66	70	50					65
2006	Q1	69	72	53					68
	Q2	74	71	49					71
	Q3	73	70	52					70
	Q4	80	60	55					74
2007	Q1	87	73	56					83
	Q2	98	76	67					93
	Q3	108	73	72					98
	Q4	117	77	74					105
2008	Q1	125	85	78	95				112
	Q2	133	82	84	98				119
	Q3	132	83	88	106				120
	Q4	138	87	99	107				126
2009	Q1	129	104	101	97				120
	Q2	120	101	100	100				114
	Q3	115	105	100	107				112
	Q4	111	104	93	115				109
2010	Q1	111	100	99	112				108
	Q2	111	110	101	110				110
	Q3	107	104	99	105				106
	Q4	106	106	107	104				106
2011	Q1	105	107	105	97				105
	Q2	105	103	107	89				103
	Q3	104	98	102	91				102
	Q4	105	104	102	89				103
2012	Q1	105	112	101	102				106
	Q2	104	101	109	96				103
	Q3	101	104	95	94				100
	Q4	100	101	103	96				100
2013	Q1	101	108	105	93				102
	Q2	99	109	104	90				100
	Q3	98	105	97	94				99
	Q4	97	109	106	90				99
2014	Q1	98	104	98	95				99
	Q2	96	102	97	93				97
	Q3	98	94	99	99				98
	Q4	98	96	101	92				98

		Sarajevo	Mostar	Zenica	Tuzla	Banja Luka	Bijeljina	Trebinje	TOTAL
2015	Q1	98	101	100	98	93	102	103	98
	Q2	101	99	99	101	109	82	97	101
	Q3	99	103	102	100	101	92	99	100
	Q4	102	97	99	100	101	118	101	101
2016	Q1	99	94	97	96	96	68	106	98
	Q2	100	97	104	99	102	93	100	100
	Q3	102	114	101	96	106	89	106	104
	Q4	103	113	104	98	106	94	105	104
2017	Q1	104	110	104	97	100	93	98	103
	Q2	104	96	105	97	98	94	89	101
	Q3	104	104	104	103	98	102	102	102
	Q4	107	93	105	100	96	100	97	102
2018	Q1	108	103	103	100	100	96	103	104
	Q2	109	110	102	100	98	100	101	105
	Q3	109	104	102	102	98	99	108	105
	Q4	109	106	102	104	100	98	108	106
2019	Q1	111	105	106	103	104	97	111	108
	Q2	113	110	109	109	97	99	106	109
	Q3	112	109	113	109	97	102	108	109
	Q4	115	108	107	108	100	104	110	110
2020	Q1	117	109	112	110	95	103	107	111
	Q2	117	122	125	103	101	109	94	114
	Q3	117	113	123	118	100	104	114	114
	Q4	118	106	121	117	96	102	103	113
2021	Q1	120	112	123	121	103	99	124	116
	Q2	122	117	127	120	109	105	122	119
	Q3	125	113	126	126	112	111	133	121
	Q4	128	107	131	130	113	117	132	125
2022	Q1	139	114	134	136	128	127	128	133
	Q2	143	123	139	137	126	126	138	136
	Q3	152	127	144	137	133	139	136	143
	Q4	157	129	141	139	143	131	145	148

Source: CBBH

Table A2: Financial Soundness Indicators

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Tier 1 ratio										
Regulatory capital ratio	15.2	14.3	13.8	15.0	14.8	16.5	17.5	18.1	18.7	18.7
CET 1 ratio	17.8	16.3	14.9	15.8	15.7	17.5	18.0	19.2	19.6	19.6
Financial leverage ratio	n/a	n/a	n/a	n/a	n/a	16.5	17.5	18.1	18.7	18.7
Non-performing loans reduced by the provisions to regulatory capital	n/a	n/a	n/a	n/a	n/a	n/a	10.5	10.2	10.0	9.9
High exposure against the capital	26.4	24.6	24.9	17.6	13.5	11.4	9.6	7.4	7.0	4.7
Assets quality	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	81.4	83.8
Non-performing assets to the total assets										
Non-performing loans to the total loans	11.3	10.5	10.0	8.3	7.1	6.2	5.2	3.4	3.2	2.5
Non-performing loans provisions to NPLs	15.1	14.2	13.7	11.8	10.0	8.8	7.4	6.1	5.8	4.5
Loans concentration by economic activity	66.7	69.7	71.2	74.4	76.7	77.4	77.0	78.4	78.4	81.4
Profitability	n/a	n/a	n/a	n/a	n/a	n/a	73.1	72.0	71.3	71.7
Return on average assets										
Return on average equity	-0.1	0.8	0.3	1.1	1.4	1.3	1.4	0.7	1.3	1.6
Net interest income to the total income	-1.2	4.5	0.9	6.2	9.0	8.5	9.1	5.6	9.6	12.0
Income from financial instruments trading to total income	62.3	61.6	62.0	60.4	58.3	58.8	56.8	56.0	59.2	56.6
Non-interest expenses to the total income	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0
Costs of wages and contributions to non-interest expenses	101.2	85.7	94.5	80.7	73.3	74.0	71.0	83.0	60.1	55.7
Liquidity	28.1	32.9	29.2	31.5	32.9	33.2	34.1	29.8	43.8	44.1
Liquid assets to total assets										
Liquid assets to short-term financial liabilities	26.2	26.6	26.2	26.9	28.1	29.3	29.2	28.6	30.7	30.5
Liquidity coverage ratio (LCR)	65.9	65.6	61.9	61.6	59.9	60.4	61.0	51.3	51.3	48.4
Net stable funding ratio (NSFR)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	216.9	213.8
Deposits to loans	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	168.8	163.5
Short-term financial liabilities to the total financial liabilities	87.2	92.4	96.9	101.7	105.1	109.6	112.7	120.7	130.3	130.8
Foreign exchange risk	47.2	48.1	50.3	52.1	55.7	57.2	56.2	65.4	68.8	72.6
Indexed and foreign currency loans to the total loans										
Liabilities in foreign currencies to the total financial liabilities	68.8	68.0	67.1	62.6	60.1	56.7	53.9	53.9	50.2	43.3
Net open position	63.8	62.7	60.3	57.4	55.1	53.3	50.7	48.1	44.4	42.5
Number of banks	5.7	9.0	8.3	1.6	-0.2	2.1	3.4	4.2	4.0	1.0
Broj banaka	23	23	23	23	23	23	23	23	22	21

Source: CBBH

Note: Compilation of FSI for the banking sector of BH from the fourth quarter 2021 is based on the IMF 2019 Financial Soundness Indicators Compilation Guide (FSI 2019 Guide).

The value of indicators is retroactively recalculated for all periods in line with the new methodology.

Table A3: Status Changes in Banks in the Period 2001-Q2/2023

	Number of banks	Type of change	Date of change
1	Sparkasse Bank d.d. Bosna i Hercegovina Sarajevo	Sparkasse Bank d.d. Sarajevo changed its name into Sparkasse Bank d.d. BiH Sarajevo	Q3 2014
	Sparkasse Bank d.d. Sarajevo	ABS banka d.d. Sarajevo changed its name into Sparkasse Bank d.d. Sarajevo	Q3 2009
	ABS banka d.d. Sarajevo	Became a member of Steiermaerkische Bank und Sparkassen AG, Erste Group	Q4 2006
	Šeh-in banka d.d. Zenica	Merged to ABS banka d.d. Sarajevo	Q2 2002
2	Bosna Bank International (BBI) d.d. Sarajevo		
3	Privredna banka Sarajevo d.d. Sarajevo	BOR banka d.d. Sarajevo changed its name into Privredna banka Sarajevo d.d. Sarajevo	Q1 2017
	BOR banka d.d. Sarajevo	Merged to BOR banka d.d. Privredna banka Sarajevo d.d. Sarajevo	Q4 2016
	Prviredna banka Sarajevo d.d. Sarajevo	Privredna banka Sarajevo d.d. Sarajevo merged with BOR banka d.d. Sarajevo	Q4 2016
4	UniCredit Bank d.d. Mostar		
	UniCredit Zagrebačka banka BiH d.d. Mostar	UniCredit Zagrebačka banka BiH changed its name into UniCredit Bank d.d. Mostar	Q1 2008
	Zagrebačka banka BH d.d. Mostar	Merging with Univerzal banka d.d. Sarajevo into UniCredit Zagrebačka banka BiH	Q3 2004
	Univerzal banka d.d. Sarajevo	Merger with Zagrebačka banka BH d.d. Mostar into UniCredit Zagrebačka banka BiH	Q3 2004
	HVB Central Profit banka d.d. Sarajevo	HVB Central profit banka Sarajevo merged to UniCredit Zagrebačka banka BiH	Q1 2008
	HVB banka d.d. Sarajevo	Merger with Central Profit banka into HVB Central Profit banka d.d. Sarajevo	Q4 2004
	Central Profit banka d.d. Sarajevo	Merger with HVB banka d.d. Sarajevo into HVB Central Profit banka d.d. Sarajevo	Q4 2004
	Travnička banka d.d. Travnik	Merged to Central Profit banka d.d. Sarajevo	Q4 2002
5	UniCredit Bank a.d. Banja Luka	Nova Banjalučka banka a.d. Banja Luka changed its name	Q2 2008
	Nova Banjalučka banka a.d. Banja Luka	Merged to HVB group, continued its operations as a separate legal entity	Q4 2005
	Banjalučka banka a.d. Banja Luka	Privatised and changed its name into Nova Banjalučka banka a.d. Banja Luka	Q1 2002
6	Addiko Bank d.d. Sarajevo		
	Hypo Alpe Adria Bank d.d. Mostar	Hypo Alpe Adria Bank d.d. Mostar changed its name and seat	Q4 2016
7	Addiko Bank a.d. Banja Luka		
	Hypo Alpe Adria Bank a.d. Banja Luka	Hypo Alpe Adria Bank a.d. Banja Luka changed its name	Q4 2016
	Kristal banka a.d. Banja Luka	Kristal banka a.d. Banja Luka changed its name	Q3 2003
8	ASA banka d.d.Sarajevo		
	ASA banka Naša i snažna d.d.Sarajevo	Merged to ASA bank d.d. Sarajevo	Q4 2022
	ASA banka Naša i snažna d.d.Sarajevo	Sberbank BH d.d. Sarajevo changed the ownership in the process of restructuring.	Q2 2022
	Vakufska banka d.d. Sarajevo	Merged to ASA bank d.d. Sarajevo	Q4 2021
	Investiciono komercijalna banka (IKB) d.d. Zenica	IKB d.d. Zenica changed its name and seat into ASA banka d.d. Sarajevo	Q4 2016
	MOJA banka d.d. Sarajevo	MOJA banka d.d. Sarajevo merged with Investiciono komercijalna banka d.d. Zenica	Q3 2016
	FIMA banka d.d. Sarajevo	Changed its name into MOJA banka d.d. Sarajevo	Q4 2010
	VABA banka d.d. Sarajevo	Changed its name into FIMA banka d.d. Sarajevo	Q3 2007
	Validus banka d.d. Sarajevo	Changed its name into VABA banka d.d. Sarajevo	Q1 2007
	Ljubljanska banka d.d. Sarajevo	Established Validus banka took over a part of assets and liabilities of Ljubljanska banka d.d. Sarajevo	Q3 2006
	ASA banka Naša i snažna d.d.Sarajevo	Sberbank d.d. Sarajevo changed the name into ASA banka Naša i snažna d.d.Sarajevo	Q2 2022
	Sberbank d.d. Sarajevo	ASA Finance d.d. Sarajevo became the owner of Sberbank d.d. Sarajevo	Q1 2022
	Sberbank d.d. Sarajevo	Volksbank d.d. Sarajevo changed the name into Sberbank d.d. Sarajevo	Q1 2013
	Volksbank d.d. Sarajevo	Sberbank group aquired Volksbank d.d Sarajevo	Q1 2012
9	Komercionalno investiciona banka (KIB) d.d. Velika Kladuša		
10	NLB Banka d.d. Sarajevo		
	NLB Tuzlanska banka d.d. Tuzla	NLB Tuzlanska banka d.d. Tuzla changed its seat and name into NLB Banka d.d. Sarajevo	Q1 2012
	Tuzlanska banka d.d. Tuzla	Tuzlanska banka d.d. Tuzla changed its name into NLB Tuzlanska banka d.d.	Q3 2006
	Comercebank bančna skupina NLB d.d. Sarajevo	Merged to Tuzlanska banka d.d. Tuzla	Q3 2006
11	NLB Banka a.d. Banja Luka		
	NLB Razvojna banka a.d. Banja Luka	NLB Razvojna banka a.d. Banja Luka changed its name into NLB a.d. Banja Luka	Q4 2015
	LHB banka a.d. Banja Luka	Merger with Razvojna banka jugoistočne Evrope into NLB Razvojna banka a.d. BL	Q2 2006
	Razvojna banka jugoistočne Evrope a.d. Banja Luka	Merger with LHB banka a.d. Banja Luka into NLB Razvojna banka a.d. Banja Luka	Q2 2006
12	Raiffeisen Bank d.d. BiH, Sarajevo		
	Raiffeisen Bank HPB d.d. Mostar	Merged to Raiffeisen banka d.d. Sarajevo	Q1 2003
13	ProCredit Bank d.d. Sarajevo	Microenterprise bank d.d. Sarajevo changed its name into ProCredit Bank	Q4 2003

	Number of banks	Type of change	Date of change
14	ZiraatBank BH d.d. Sarajevo	Turkish Ziraat Bank Bosnia d.d. Sarajevo changed its name into Ziraat Bank BH	Q1 2013
15	Union banka d.d. Sarajevo		
16	Atos bank a.d. Banja Luka	Sberbank a.d. Banja Luka changed its name into Atos bank a.d. Banja Luka	Q2 2022
	Sberbank a.d. Banja Luka	Nova banka a.d. Banja Luka became owner of Sberbank a.d. Banja Luka, in the process of restructuring.	Q2 2022
	Sberbank a.d. Banja Luka	Volksbank a.d. Banja Luka changed its name	Q1 2013
	Volksbank a.d. Banja Luka	Sberbank group acquired Volksbank a.d. Banja Luka	Q1 2012
	Zepter Komerc banka a.d. Banja Luka	Became a member of Volksbank International AG, changed its name into Volksbank a.d. BL	Q3 2007
17	Intesa Sanpaolo banka d.d. BiH		
	UPI banka d.d. Sarajevo	Changed its name into Intesa Sanpaolo banka d.d. BiH	Q3 2008
	LT Gospodarska banka d.d. Sarajevo	Merged to UPI banka d.d. Sarajevo	Q3 2007
	Gospodarska banka d.d. Sarajevo	Merger with LT Komercijalna banka Livno into LT Gospodarska banka d.d. Sarajevo	Q1 2003
	LT Komercijalna banka d.d. Livno	Merger with Gospodarska banka Sarajevo into LT Gospodarska banka d.d. Sarajevo	Q1 2003
18	Nova banka a.d. Banja Luka	Nova banka a.d. Bijeljina changed its seat	Q3 2007
	Agroprom banka a.d. Banja Luka	Merged to Nova banka a.d. Bijeljina	Q1 2003
19	Naša banka a.d. Bijeljina		
	Pavlović International Banka a.d. Slobomir Bijeljina	Changed its name into Naša banka a.d. Bijeljina	Q4 2019
	Privredna banka a.d. Doboj	Merged to Pavlović International banka	Q2 2003
	Privredna banka a.d. Brčko	Merged to Pavlović International banka	Q4 2002
	Semberska banka a.d. Bijeljina	Merged to Pavlović International banka	Q4 2001
20	Banka Poštanska štedionica a.d. Banja Luka		
	Komercijalna banka a.d. Banja Luka	Komercijalna banka changed its name into Banka Poštanska štedionoca a.d. Banja Luka	Q1 2022
	Komercijalna banka a.d. Banja Luka	Banka Poštanska štedionica a.d. Beograd bought Komercijalna banka a.d. Banja Luka	Q4 2021
21	MF banka a.d. Banja Luka		
	IEFK banka a.d. Banja Luka	Changed its name into MF banka a.d. Banja Luka	Q3 2010

	Banks with revoked operating licence since 2002:	Date of change
1	Camelia banka d.d. Bihać	Q1 2002
2	Privredna banka a.d. Gradiška	Q1 2002
3	Ekvator banka a.d. Banja Luka	Q1 2002
4	International Commercial Bank Bosnia d.d. Sarajevo	Q3 2002
5	Banka za jugoistočnu Evropu Banja Luka	Q4 2002
6	Privredna banka a.d. Srpsko Sarajevo	Q4 2004
7	Gospodarska banka d.d. Mostar	Q4 2004
8	Ljubljanska banka d.d. Sarajevo	Q3 2006
9	Hercegovačka banka d.d. Mostar	Q3 2012
10	Postbank BH Poštanska banka BiH d.d. Sarajevo	Q2 2013
11	Bobar banka a.d. Bijeljina	Q4 2014
12	Banka Srpske a.d. Banja Luka	Q2 2016
13	Vakufska banka d.d. Sarajevo	Q4 2021
14	ASA banka Naša i snažna d.d.Sarajevo	Q4 2022

Source: CBBH

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