



MONETARY POLICY AND FINANCIAL STABILITY

RESEARCH PAPER

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The interaction between monetary policy and financial stability is examined in the Research Paper as part of Block 5 of the Bank of Russia Monetary Policy Review. This paper looks at the Bank of Russia's experience in conducting monetary policy within the inflation targeting regime, both during the build-up and realization of systemic risks and in periods of subsequent economic recovery and financial system adaptation. The global experience in implementing monetary policy (dis)regarding to financial stability is briefly systematised, in addition, and other review material is presented.

INTRODUCTION

Under the law, the Bank of Russia is responsible for a several aspects of economic policy. These include monetary policy (MP), which aims to fulfil the principal function of the Bank of Russia under the Constitution of the Russian Federation — to protect the ruble and ensure its strength. It is achieved by maintaining price stability through sustainable low inflation. The Bank of Russia's **monetary policy is complemented by another essential policy — elaboration and ensuring the stable functioning of the banking sector**, financial market, and national payment system. The two are interconnected. For instance, on one hand, the absence of a stable financial system not only hinders the effective functioning of the entire economic mechanism but also significantly reduces the efficiency of MP transmission. On the other hand, the absence of price stability results in slow economic activity, primarily in investments, which negatively impacts business of financial intermediaries in the long run.

To reconcile both policies is a big challenge to a central bank. At present, the Bank of Russia adheres to separate goal-setting, i.e. it distinguishes between the objectives and instruments of the monetary policy and policies aimed at maintaining financial sector stability. Typically, the Bank of Russia employs its monetary policy and the key rate as the primary instrument to achieve the inflation target, while other mechanisms ensure the stability of the financial sector. These primarily include microprudential regulation of credit and other financial institutions, as well as supervisory activities. Moreover — and this is a specific feature of the Russian banking system — in some periods the Bank of Russia carried out financial resolution arrangements to strengthen financial stability as part of its mega-regulatory functions. In recent years, the toolkit has been complemented by macroprudential policy measures aimed at preventing the build-up of excessive risks in certain segments of the financial system, minimising the likelihood of crisis events and their negative economic consequences, and thereby supporting financial system stability.

The concept of separate goal-setting does not indicate a total absence of mutual consideration when making decisions regarding monetary policy and financial stability policy. A review of regulatory decisions in world's economies indicates that decision-making can often relate to a regulator stance on the monetary policy influence on the financial market and to regulatory measures (Asriev, 2017). It proves a recent episode of the United Kingdom's central bank forced actions to maintain financial stability. In September 2022, the Bank of England had to resort to purchasing government bonds due to a sharp rise in yields. A spike in government bond yields and a decrease in the pound sterling exchange rate against the US dollar followed the UK Government's announcement of an unrealistic plan of measures, accompanied by a series of tax cuts and increased budget expenditures to offset rising electricity bills. Against this backdrop, UK pension funds encountered margin calls on derivative contracts they used for hedging their obligations. The Bank of England's intervention was necessary to support pension funds. In the event of risk materialisation, central banks often serve as a lender of last resort at both the systemic level and for individual legal entities, fulfilling one of the earliest and most traditional functions in monetary regulation. For instance, rates growth in the United States during 2022–2023 resulted in the materialisation of market risk in the banking sector and the failure of two major American banks. To limit systemic risks in the US financial sector,

the Federal Deposit Insurance Corporation, in collaboration with the Federal Reserve System and the Treasury, implemented timely measures to support the banking sector's liquidity.¹

It is important to note that, despite the mentioned interrelation between monetary policy and financial stability policy, there is a significant difference between them in terms of time horizon of their transmission to the economic processes. As to the monetary policy, the regulator's decisions are medium-term oriented. Meanwhile, the financial stability policy aim at measures that affect both individual financial institutions and market segments across the entire foreseeable horizon. For instance, microprudential regulation measures have a long-term character. They are usually introduced on a permanent basis, operating independently of current economic conditions and primarily affecting the structural aspects of financial institutions' activities. Macroprudential policy decisions are considerably linked to fluctuations in transaction volumes within the banking sector, financial markets, and the economy. So, these measures are also medium-term oriented, aiming to strengthen the stability of financial institutions, particularly those of preventive nature.

Short-term activities on ensuring financial stability — anti-crisis policy, have their own specific nature. The reason is that, when thinking of medium and long-term horizons, the focus is on limiting the accumulation of systemic risks, which minimises the probability of and alleviates the consequences of future financial crises. While, anti-crisis policy aims to maintain financial stability when risks have already realized. The main objective of a central bank in such a situation is to ensure the continual and orderly functioning of the financial system. Maintaining the ability to make payments between economic agents plays a crucial role in this process. This requires an adequate level of liquidity in the system — to achieve this, the regulator must use the toolkit to fulfill its role as a lender of last resort, as well as implement measures to prevent bank runs when necessary, using monetary policy instruments.

This paper looks at various aspects of monetary policy in interconnection with financial stability, including academic research and approaches that allow to study theoretical framework of monetary policy and financial stability. Section I examines the fundamental concepts and terms used in the paper. Section II focuses on the Bank of Russia's experience and the national practice of executing the mandate to protect price and financial stability. The Bank of Russia's activities since 2022 Q1 represents a vivid example of this practice mitigating the crisis events. The Appendices cover the worldwide practice and contemporary international empirical approaches to conducting monetary policy relative to financial stability, analysed through selected country experience or expert recommendations.

¹ For more details, see the section Worldwide practice in Appendix 2.

I. FUNDAMENTAL CONCEPTS AND ISSUES

It is essential to review basic terms related to the issue of monetary policy and financial stability to precisely determine the details of functioning the financial and real sectors. This outlines the scope of analysis, on the one hand, avoiding the study of cases irrelevant to the subject matter, and on the other hand, not overlooking the key patterns of financial stability incorporation in monetary policy and vice versa.

Systemic risks and financial stability

The financial sector is inseparably linked to the real sector, and changes in conditions and transaction volumes can either accelerate or decelerate economic activity within it. The accumulation of excessive risks in the financial sector can consequently have a negative impact on the real sector. The materialisation of financial risks can slow down the financial sector to such an extent that it could both directly limit its ability to provide financing and cause banks to tighten monetary and credit conditions to mitigate potential losses from new transactions. In such context, **systemic risks are to be discussed, as their materialisation in the financial sector leads to negative effects for the real sector**. Systemic risks can concentrate in various segments of the financial sector, and their appearance in macro indicators may not always be immediately apparent.

Systemic risks can be both external and internal, depending on the source of origin relative to the domestic financial sector. External systemic risks emerge in the domestic financial sector due to unfavourable shifts in the external environment, primarily as a result of changes in cross-border capital flows. These risks are linked, among other factors, to conditions for cross-border capital flow: changes in international infrastructure or the implementation of restrictive regulatory measures. Internal systemic risks are endogenously formed within the national financial sector, meaning they can be related to the expansion of financial institutions' balance sheets and changes in their structure, as well as excessive asset price growth.

Advanced economies, due to higher labour productivity and capital returns, often exhibit the build-up of internal systemic risks. New technologies and financial instruments, combined with the ultra-soft monetary conditions observed in advanced economies for an extended period, have contributed to the accumulation of mainly endogenous systemic risks. Emerging market economies are more likely to depend on external conditions, including cross-border capital flows. The globalisation of financial markets and the pursuit of returns by conservative investors during periods of low interest rates in advanced economies have ultimately led to a stronger impact of cross-border capital flows on macroeconomic indicators in emerging market economies rather than internal changes. For Russia in the context of sanctions and counter-sanctions, the factor of cross-border capital flows has become less pronounced.

One can describe **financial stability as the resilience of the financial system to shocks and its continuous and efficient performance**. Systemic risks and financial stability risks are synonymous. There are distinct periods for the accumulation and materialisation of systemic risks. Systemic risk accumulation is the process of shaping risks to financial stability, before their direct and negative impact on the financial system and real sector. Materialisation of systemic risks follows when previously accumulated risks for financial stability actually have affected asset values, economic agents' performance, or other indicators, or, to make clear, when a financial crisis has occurred. It is worth noting that the concept of financial instability is broader and usually refers to significant volatility in financial markets or flows without considering the systemic effect.

It is impossible to completely eliminate systemic risks. Theoretically, it can be attempted to achieve by fully covering financial risks with financial entities' own funds, but then the functioning of financial institutions based on the use of borrowed funds becomes impossible, which runs totally counter the current concept of building the modern financial system. Therefore, the task of ensuring financial stability requires the regulator to accurately assess risks and adopt measures that will provide a balance between the efficient functioning of the financial sector in normal conditions and economy protection in stress.

Monetary policy and financial stability

The interaction between monetary policy and measures to ensure and maintain financial stability can be boiled down to the question of which elements of these two policies and under what conditions should be used to achieve each other's objectives. One can argue whether monetary policy should counteract financial or asset bubbles. Or, conversely, how and to what extent should monetary policy intervene in a situation where a crisis has already happened due to the materialisation of systemic risks. Similarly, it can be argued that banking regulation or other measures to ensure financial stability can influence economic activity and, consequently, inflation dynamics. This raises the question of how monetary policy should account for such changes in financial regulation and more broadly, about the appropriateness to incorporate financial stability considerations in monetary policy.

Thinking about which policies should be used and under what conditions, one can examine scenarios in which monetary policy and financial stability possibly may interact.

Table 1. Interaction between monetary policy and financial stability

Changes in financial stability that may require monetary policy responses	Changes in monetary policy that may impact financial stability
Market failures — for example, in the valuation of assets and assessment of risks	Material changes in interest rates or maintaining rates at an extreme level
Creation of new market segments that may also distort monetary policy transmission	Adjustment of monetary policy influencing opportunities and approaches to risk management in the financial sector
Alterations in financial regulation, encompassing risk management and permissions and prohibitions on specific operations	Nonlinearity or differentiation of monetary policy's impact on systemic risks, evident in extraordinary situations
Structural shifts affecting the characteristics and dynamics of risk build-up	

The given correlations between monetary policy and financial stability do not necessarily imply that the regulator takes any additional specific actions when implementing the relevant policy.

In other words, the table above does not provide binding recommendations, e.g., on conducting monetary policy under financial stability risks. It simply facilitates a more structured approach to the issue of interdependence between the two policies. A closer look at the linkages between monetary policy and financial stability can be drawn from worldwide experience, including that of Russia.

II. BANK OF RUSSIA EXPERIENCE

The Bank of Russia generally adheres to the concept of separate goal-setting when implementing monetary policy and ensuring financial stability. However, in certain episodes, the Bank of Russia either employed monetary policy to support financial stability or evaluated their potential reciprocal interaction. This pertained to both conducting monetary policy amid risks to financial stability, predominantly during crisis periods, and implementing monetary policy during intensive banking regulation, i.e. changing microprudential or macroprudential policy parameters.

1. Monetary policy and financial stability risks

In the monetary policy implementation in 2014–2022, the Bank of Russia has been encountering the realization of risks to financial stability. Depending on economic conditions and risk types, the Bank of Russia used various instruments, including monetary policy.

1.1. Operational procedure and financial stability

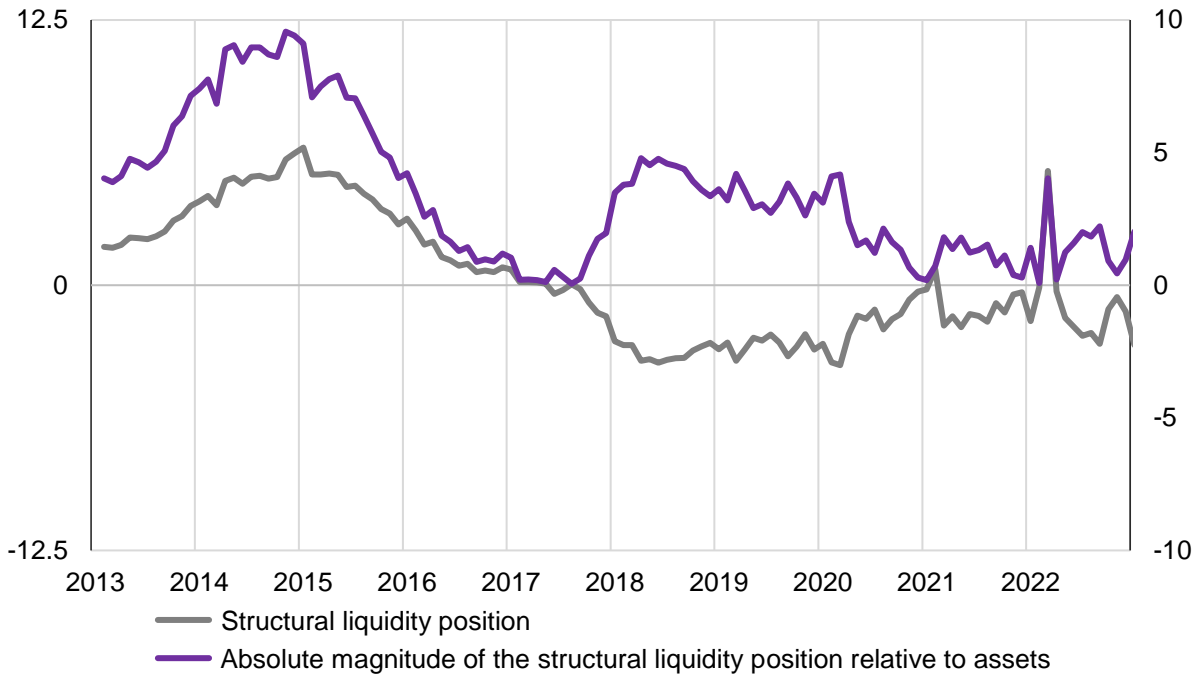
Monetary policy and measures for financial stability can be interconnected not only in substance but at the operational level as well. Financial stability risks often propagate through the short-term money market. The short-term interbank loan market serves as a starting point for the formation of interest rates in the economy. The repo market connects the main groups of financial market participants and collateral markets, while the currency swap market links domestic money and foreign exchange markets. Negative events in one financial market segment can rapidly spread throughout the domestic financial sector via the money market, posing a threat to both financial stability and monetary policy objectives.

Meanwhile, inflation-targeting central banks typically implement monetary policy by influencing short-term money market rates through their operations. Therefore, instruments that in normal circumstances are used for managing rates, can automatically become instruments of financial stability under stress. In defining their operations' parameters, central banks usually include instruments for virtually unlimited liquidity provision², enabling them to **effectively act as the lender of last resort**.

At various times, the Bank of Russia has withstood diverse financial stability risks, which also impacted the Russian money market. The Bank of Russia's operational procedure has played a significant role in limiting the spread of these risks. In developing its toolkit, the Bank of Russia has taken into account both the experience of crisis events in Russia during 2008-2009 and potential future risks.

² This role can be fulfilled by either standard liquidity provision instruments, which form the upper bound of the interest rate corridor, or a separate instrument, as emergency liquidity assistance mechanism (ELA).

Chart 1. Bank liquidity and assets (₽ trillion) and ratio (% on the right-hand axis)



Note: Structural position >0 indicates a deficit, while structural position <0 indicates a surplus.

Source: Bank of Russia.

Thus, the Bank of Russia has established a broad range of liquidity provision tools, varying by operation type, term, and collateral. Considering insufficiency of market collateral on banks' balance sheets, the Bank of Russia uses loans secured by credit claims as a standard instrument to cover large liquidity outflows. Rates for all liquidity provision instruments of similar maturities are set at the same level to avoid creating a 'stigma' effect when using them. Since 2018, the Bank of Russia has employed a countercyclical approach in managing collateral for its operations: with the liquidity condition being ease, collateral requirements are tightened. If a structural liquidity deficit is anticipated or there is an outflow of liquidity from the banking sector, the Bank of Russia eases collateral requirements: incorporating securities into the Lombard List, lowering discounts, increasing adjustment ratio, and if necessary, fixing the value of securities for monetary policy operations. Additionally, in recent years, the Bank of Russia has significantly simplified the process of including non-marketable assets as collateral and the technologies related to obtaining loans and transaction settlements.

Another crucial component of the Bank of Russia's liquidity management system is required reserves. This instrument serves two purposes. Firstly, required reserves averaging enables credit institutions to build up a liquidity buffer that they can use to make payments, rather than expose themselves to borrowing at inflated rates or halting payments. Secondly, by lowering required reserve ratios, the Bank of Russia can simultaneously provide banks with a substantial volume of liquidity — the freed portion of funds after such easing can be more flexibly utilised for settlements.

These instruments of the Bank of Russia have proven being quite effective in preventing crisis events. For instance, in 2014, the structural liquidity deficit neared 10% of the banking sector total assets. In 2022, within less than a month, the structural liquidity balance shifted from a stable surplus of ₽1–2 trillion to a deficit of ₽7 trillion at its peak. The Bank of Russia promptly supplied banks with the funds they needed, backed by high-quality collateral. Although activity in money market segments slowed, the overall market continued to operate. As a result, periods of tension in the money market were short-lived and did not impact its future functioning, contributing to the stability of the banking sector.

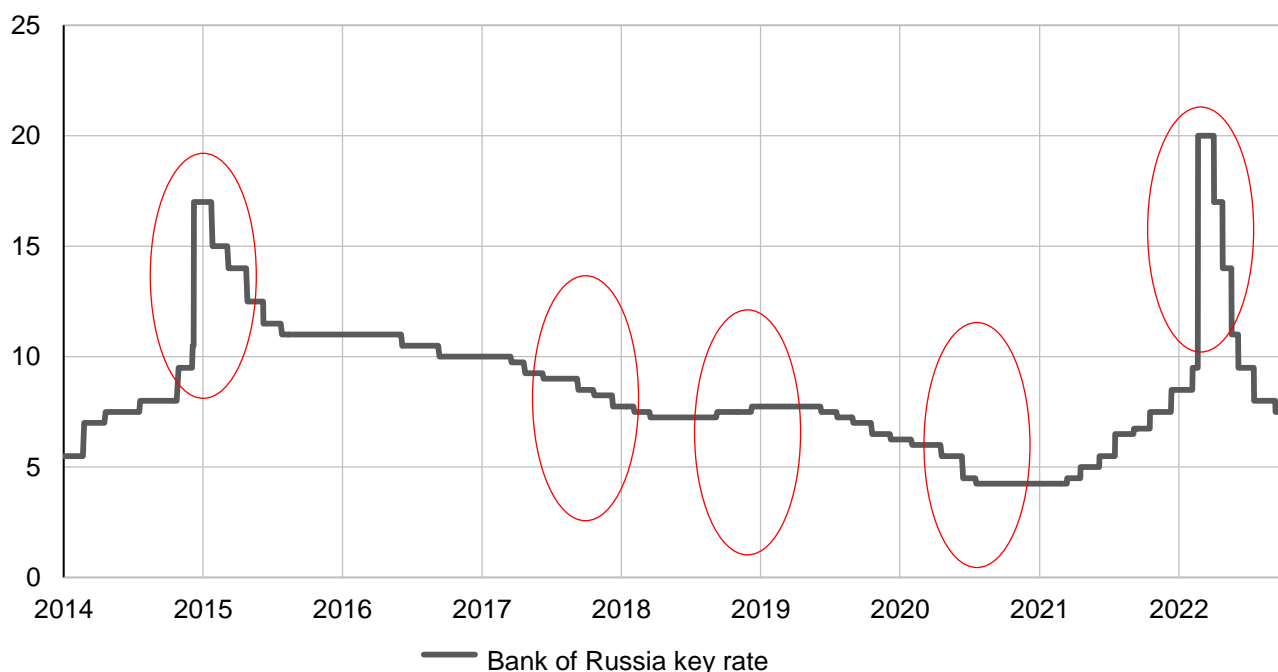
The Bank of Russia experience in December 2014 and February–March 2022 stands in contrast to that of 2008–2009 crisis. At that time, despite a similar structural liquidity deficit, standard refinancing

instruments were insufficient, forcing the Bank of Russia to grant unsecured loans to a select group of credit institutions, which also resulted in financial losses for the regulator. Lower required reserve ratios proved to be less effective as well: since the initial amount of averaged required reserves was low, banks continued to hold substantial balances on their correspondent accounts. Furthermore, currency interventions conducted in the autumn of 2008 and winter of 2009 led to a persistent liquidity outflow, hindering the normalisation of the money market situation.

1.2. Interest rate policy and financial stability

Let us take a closer look at the Bank of Russia approach to mutual consideration of monetary policy regarding interest rate policy and financial stability support measures from 2014 to 2022. Financial stability measures include also a variety of options from other economic policy areas, including actions taken by the Government of Russia.

Chart 2. Key rate (% p.a.) and episodes of financial stability risks



Note: Periods associated with risks to financial stability are circled in red.

Source: Bank of Russia.

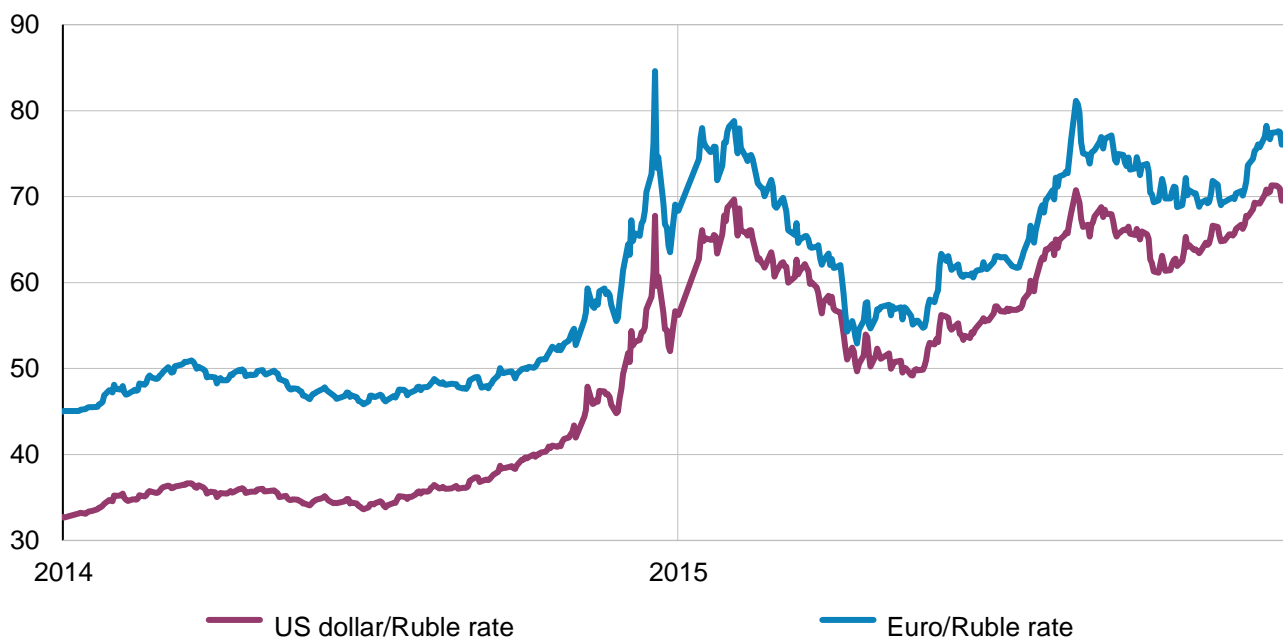
The sanctions and foreign trade crisis of 2014–2015

The official transition to an inflation targeting regime in 2015 started amidst the materialisation of series of predominantly external risks. The worsening of external conditions, linked to the decline in global oil prices, the introduction of international financial restrictions on the Russian economy, and a general decrease in risk appetite for assets in emerging market economies, led to cross-border capital outflow, which weakened the domestic currency.

The materialisation of risks resulted in a revaluation of foreign currency assets in the banking sector, an increase in debt burden in the real sector, and intensified the overall negative investment climate

in the Russian economy. Despite the economic downturn, there was an acceleration in price growth, accompanied by high inflationary expectations.

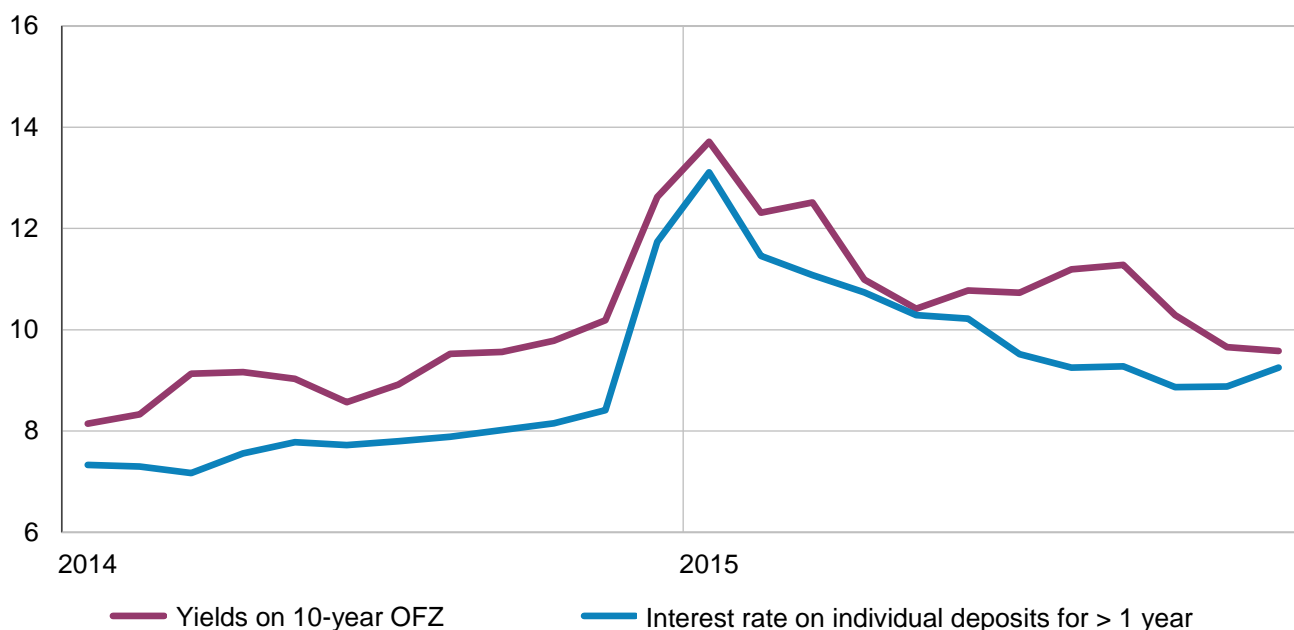
Chart 3. US dollar to Ruble exchange rate (₽/\$) and Euro to Ruble exchange rate (₽/€)



Source: Bank of Russia.

To limit external and related internal risks, tightening of monetary policy was employed. The Bank of Russia at the end of 2014 raised the key rate by 6.5 pps, to 17.0%. That significant increase was driven by a combination of risks related to inflation dynamics as well as by negative expectations formed by economic agents. As a result, the high level of real interest rates on savings instruments in the domestic currency indirectly contributed to limiting devaluation risks tied to the behaviour of domestic market participants. It was essential to maintain a balance between curbing inflation and inflation expectations while preventing excessive economic cooling. In that context, the objective of ensuring financial stability was inseparable from the task of minimising risks to macroeconomic stability.

Following the increase of the key rate to 17.0% in 2014, the Bank of Russia made decisions on its gradual reduction, considering the then-current situation and risk balance. The uncertain external environment and ongoing risks of pro-inflationary and devaluation expectations in the domestic market made a rapid reduction of the key rate impossible — it took about two years for the key rate to return to the previous level.

Chart 4. Yields on ruble savings instruments (% p.a.)

Source: Bank of Russia.

Measures taken to preserve financial stability were not limited to monetary policy tightening. Instruments to maintain liquidity and stability of banks were also deployed. The Bank of Russia made extensive use of the mechanism of providing ruble liquidity to banks for various terms, Lombard List was extended³. New instruments were introduced to provide foreign currency liquidity: currency delivery swap, foreign currency repo, loans denominated in a foreign currency (Bank of Russia, 2022a-b-c). The financial sector resilience was supported by regulatory easing related to the formation of provisions for possible losses in terms of accounting for changes in exchange rates and revaluation of assets (Bank of Russia, 2021a). Increase in the deposit insurance coverage from ₰0.7 million to ₰1.4 million reduced the liquidity risk of credit institutions by preventing potential depositors' run-ins.

An alternative decision not to raise the key rate at the end of 2014 would have been suboptimal in terms of monetary policy against the background of a weaker national currency and accelerating price growth. In the then-current conditions, a quick adjustment of monetary policy to changes in external conditions was necessary both for the gradual return of inflation to the target and for the stabilisation of inflation expectations.

The option of a gradual increase in the key rate versus instant one at the end of 2014 could also be consistent with the logic of adjusting the monetary policy to the changing external environment. However, the domestic market was exposed, as noted, to significant risks of growth in inflation and devaluation expectations, accompanied by an increase in demand for foreign assets. The materialisation of these risks could lead to further spiralling inflation and the domestic currency depreciation. However, the pace of monetary policy adjustment to new levels could have been lagged. Therefore, a sharp increase in the key rate made it possible to maintain financial stability.

A subsequent rapid easing of monetary policy would pose high risks of renewed inflation acceleration and a divergence between inflation expectations and the Bank of Russia's forecast. This would, in turn, lead to the necessity of tightening monetary policy again, potentially causing negative effects on the non-financial sector, including real income dynamics.

³ For more details, see Subsection 1.1. Operational procedure and financial stability and Annual Report of the Bank of Russia for 2014.

The Bank of Russia could maintain a significantly stricter monetary policy for an extended period to further reduce risks in financial markets and potentially alter exchange rate dynamics. A positive effect on financial markets from such a decision, however, would likely not be realised under then current external constraints. The real sector would continue to experience negative impacts due to the persistence of tight monetary conditions. Therefore, the Bank of Russia evaluated the effect of the already implemented monetary policy tightening on inflation expectations and exchange rate dynamics as sufficient for achieving both inflation and financial stability goals, allowing for a gradual reduction of the key rate.

Bank resolutions in 2017–2019

The separation of the objectives and instruments of monetary policy and financial sector sustainability policies does not imply that these policies do not interact. An example of such interaction was the accounting of financial resolution of a number of banks in 2017–2019 carried out by the Bank of Russia. From 2010 to 2016, these operations were carried out by the Deposit Insurance Agency (DIA) involving the Bank of Russia's financial resources. In addition, a mechanism was developed to raise funds from shareholders and creditors. This allowed to consider public funds financing for the resolution of credit institutions as the final reserve for solving problems (Sukhov, 2014). In 2017, the Bank of Russia modified its approach to financial resolution of banks by providing for direct participation in the stakeholding of banks under resolution with the use of funds from the Fund of Banking Sector Consolidation (FBSC).

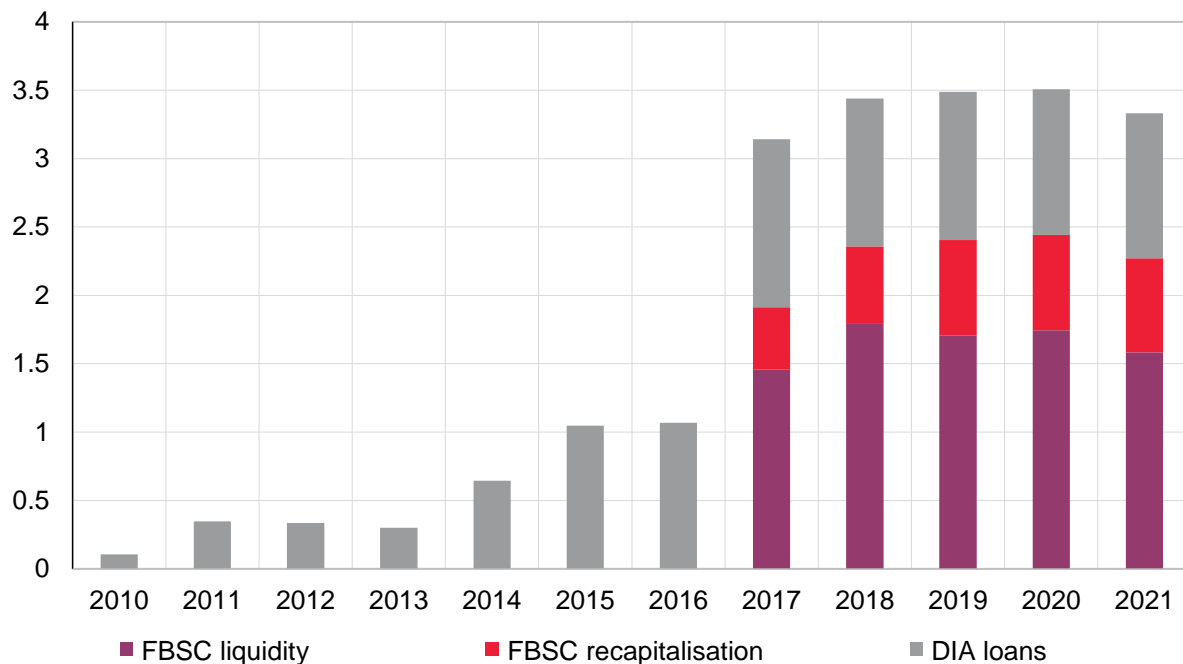
In world practice, financial resolution of credit institutions is predominantly carried out without central bank funds. For instance, a bailout is a common form of supporting financial stability through additional financing of banks via budgetary operations. Additionally, a bail-in — a form of financial relief for a credit institution by converting debt into equity instruments — can be applied, using the funds of the institution's creditors. The introduction of the resolution mechanism with the direct involvement of the Bank of Russia has increased the transparency of the resolution process, the effectiveness of control over fund execution, and contributed to reducing state expenses and the duration of banks' financial resolution.

In 2017 H2, the Bank of Russia initiated financial resolution mechanism, and from August to December, banks received through it about ₱1.5 trillion, with three large banks as recipients⁴. The volume of operations to prevent credit institutions' failures involving DIA increased — exceeding ₱400 billion by 2017 end. The Bank of Russia continued during 2018–2019 to implement arrangements of financial resolution and recapitalised several more large credit institutions⁵. This also promoted the growth of the banking sector's stability, including by increasing transparency concerning the prevalence and volume of risks due to the potential instability of individual major banking market participants.

⁴ PJSC Bank FC Otkritie, PJSC B&N BANK, and PJSC Promsvyazbank. For PJSC Bank FC Otkritie, the main portion of financing (totalling ₱836.2 billion) was directed for recapitalisation (₱456.2 billion).

⁵ In 2018, for PJSC B&N BANK, JSC ROST BANK, JSC Bank AVB, Bank TRUST (PJSC), and Asian-Pacific Bank (PJSC); in 2019, for PJSC MinBank and JSC VOKBANK.

Chart 5. Debt of FBSC and DIA in operations with the Bank of Russia (₽ trillion)



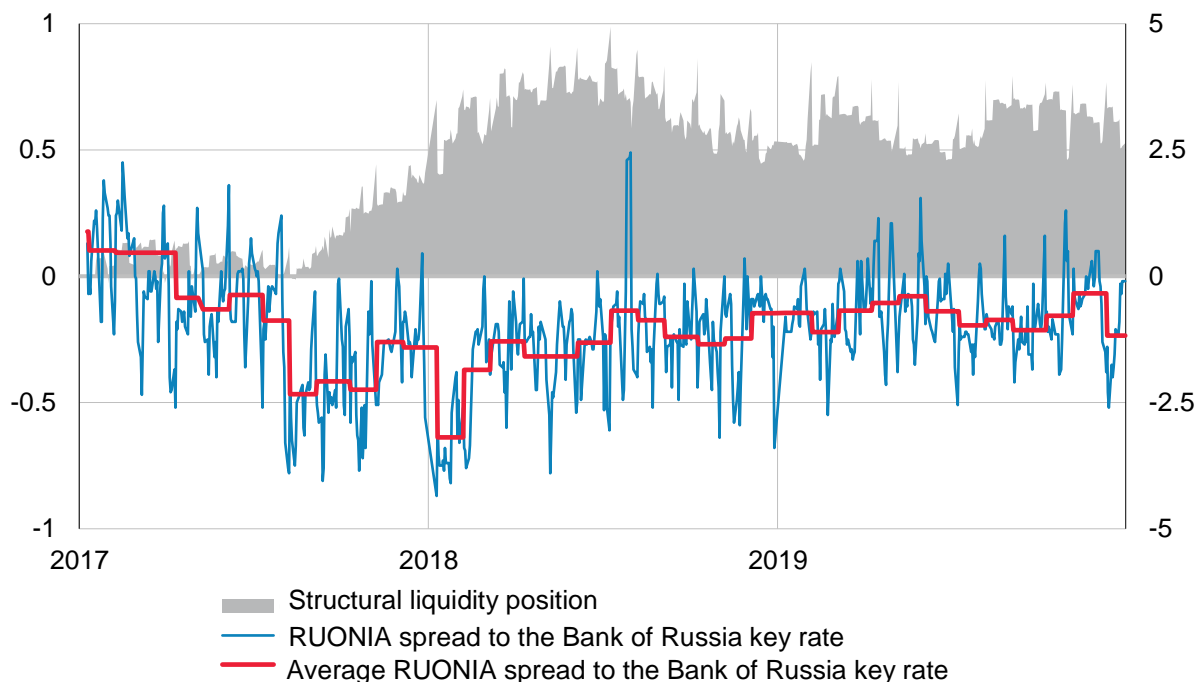
Note: FBSC liquidity — placing funds on deposits with banks, FBSC recapitalisation — funds directed towards purchasing bank shares. Data is presented as of year-end.

Source: DIA.

At the beginning of 2017, the banking sector shifted to a structural liquidity surplus. RUONIA⁶ — the Bank of Russia's operational benchmark⁷ — was close to the key rate. In July–August 2017, a large credit institution experience an outflow of client funds, which it compensated for using standard instruments of the Bank of Russia monetary policy. It proved the fact that while the structural surplus remained unchanged, other market participants saw an inflow of liquidity. Reflecting the change in liquidity conditions for many banks, the spread between RUONIA and the key rate became consistently negative, reaching (-40)-(-50) bps in August–October, equivalent to monetary policy easing at a constant key rate. The reason was that it took time normally for credit institutions to adapt to the new structural surplus level and adjust the volume of their operations with the Bank of Russia and in the money market. Starting from the end of August 2017, the Bank of Russia began to provide funds through the FBSC, including replacement of borrowings within monetary policy instruments, and the structural liquidity surplus grew rapidly. Only after the inflow of liquidity to banks through FBSC operations ceased in spring 2018 did the spread between the RUONIA rate and the key rate stabilise near -25 bps, which is normal under a structural liquidity surplus (Bank of Russia, 2022a). Meanwhile, the interest rate transmission channel of monetary policy operated efficiently: changes in money market rates were reflected in bank loan and deposit rates, as well as asset yields. The FBSC and DIA operations did not impact the achievement of the monetary policy operational goal due to their smaller scale.

⁶ RUONIA (Ruble Overnight Index Average) is the weighted average interest rate on overnight interbank ruble loans (deposits) reflecting the cost of unsecured overnight borrowing.

⁷ The operational objective of the Bank of Russia's monetary policy within the inflation targeting is to maintain rates in the unsecured overnight segment of the interbank money market close to the Bank of Russia key rate.

Chart 6. Money market rate indicators (pps) and bank liquidity (₽ trillions on the right-hand axis)

Note: Average values — for the required reserves averaging period.

Source: Bank of Russia.

Despite the advantages of the central bank's direct participation in resolution of commercial banks, the Bank of Russia's experience shows that such operations may temporarily reduce the efficiency of operational procedure. Furthermore, a somewhat paradoxical situation arose: the Bank of Russia had to absorb funds it had independently allocated for financial resolution, instead of, for example, budgetary funds.

The management of market rates is also influenced by the flow of client funds, driven by concerns about the financial stability of individual banks. Moreover, without FBSC operations, the scale of client run could have been significantly larger, and the negative background could have led to decreased credibility of the money market and negatively affected the banking system stability. The Bank of Russia's timely actions and information transparency regarding measures taken in 2017 helped to ease the negative effects of declining financial stability for individual banks, including for operational procedure.

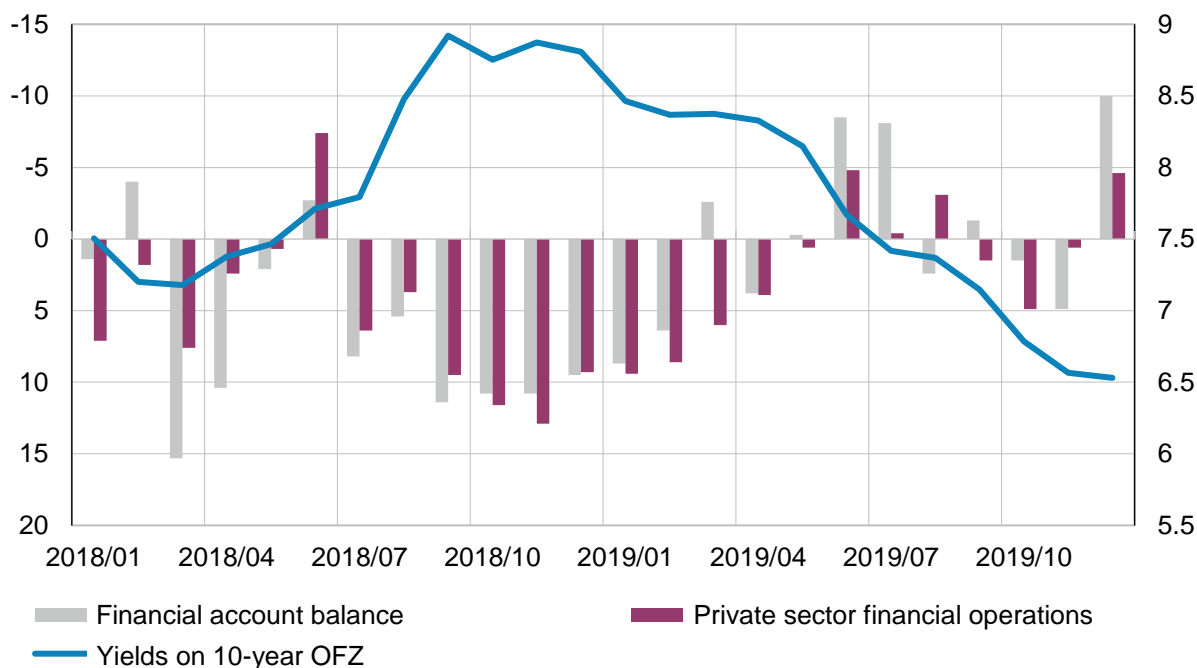
External volatility in 2018

Following a prolonged period of monetary policy easing (early 2015 – early 2018), at the end of 2018 Q1, the Bank of Russia has faced a gradual increase in external risks. The outflow of non-resident funds from OFZs and the domestic currency depreciation intensified pro-inflationary risks, which had previously formed due to rising prices in the global food market and the increase in VAT from 2019. Additionally, there was a gradual decrease in banks' foreign currency liquidity.

In such conditions, in August 2018, the Bank of Russia announced the suspension of foreign currency purchases under the fiscal rule until the end of 2018 to limit financial stability risks, which helped to curb excessive exchange rate volatility and related risks, including for the banking sector's currency liquidity.

From September to December, the Bank of Russia tightened its monetary policy taking into account its macroeconomic forecast. The key rate was raised in view of a combination of factors, including both internal risks, primarily the risk of accelerated price growth, as well as external risks, and a decrease in the key rate to a neutral range.

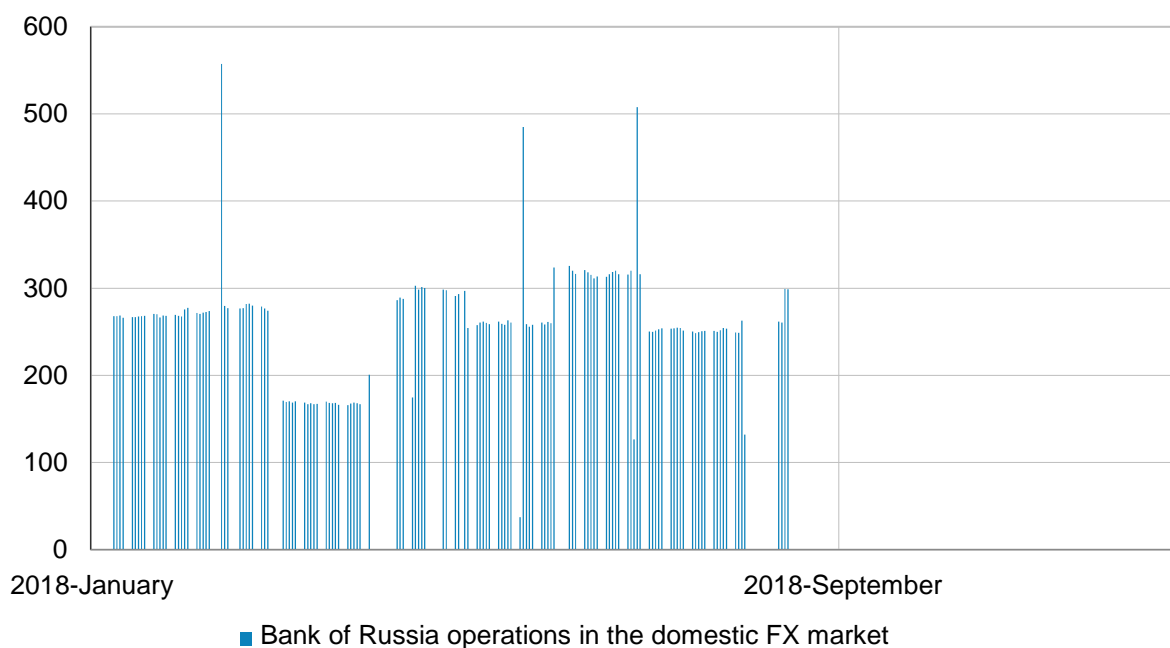
Chart 7. Russia's balance of payments items (\$ billion) and OFZ yields (% p.a.)



Note: Balance >0 — inflow, balance <0 — outflow.

Source: Bank of Russia.

It is worth noting that if only monetary policy tightening had been implemented amid declining risk appetite in global markets and specific negative news about restrictions on the Russian economy, an increase in the key rate could have limited inflationary effects but not touched upon financial stability aspects related to the foreign exchange market and banks' currency liquidity. The continuation of currency purchases by the Bank of Russia hence could have intensified the undesirable perception of the developments by market participants.

Chart 8. Foreign currency transactions within the fiscal rule framework (\$ million)

Note: Operations >0 — purchases.

Source: Bank of Russia.

Pandemic 2020

Amid the coronavirus pandemic in 2020, the Bank of Russia took account of its previous experience of conducting monetary policy under financial stability risks. The outbreak of coronavirus required the implementation of administrative restrictions, leading to a decrease in aggregate demand in the global economy. In other words, the economic crisis was man-made: it was not triggered by systemic financial risks, although it did negatively affect income in the economy and the financial sector conditions.

In 2020 Q1–Q2, when conducting monetary policy in that environment, the Bank of Russia stemmed from the following circumstances:

- the uncertainty of the economic situation amid the coronavirus;
- the temporary nature of the aggregate demand decline in the Russian economy due to anti-pandemic administrative restrictions;
- an intensive downturn in global oil prices;
- a shift in the balance of risks towards disinflationary factors amid the economic slowdown;
- the short-term pro-inflationary effect caused by the ruble weakening due to cross-border capital outflow;
- the positive experience of adjusting currency operation volumes within the fiscal rule framework.

At the onset of the pandemic in March 2020, the Bank of Russia resolved to halt the monetary policy easing cycle and maintain the key rate at the then-current level. The decision was made in view of limiting financial stability risks amid growing uncertainty. The influence on price stability from the surge in demand observed during the period was also taken into account.

Support for the real sector could not be achieved solely through monetary policy measures; fiscal policy played a significant role in this regard. It was implemented through incentive programmes for individuals, small and medium-sized enterprises, and systemically important institutions, which helped sustain aggregate

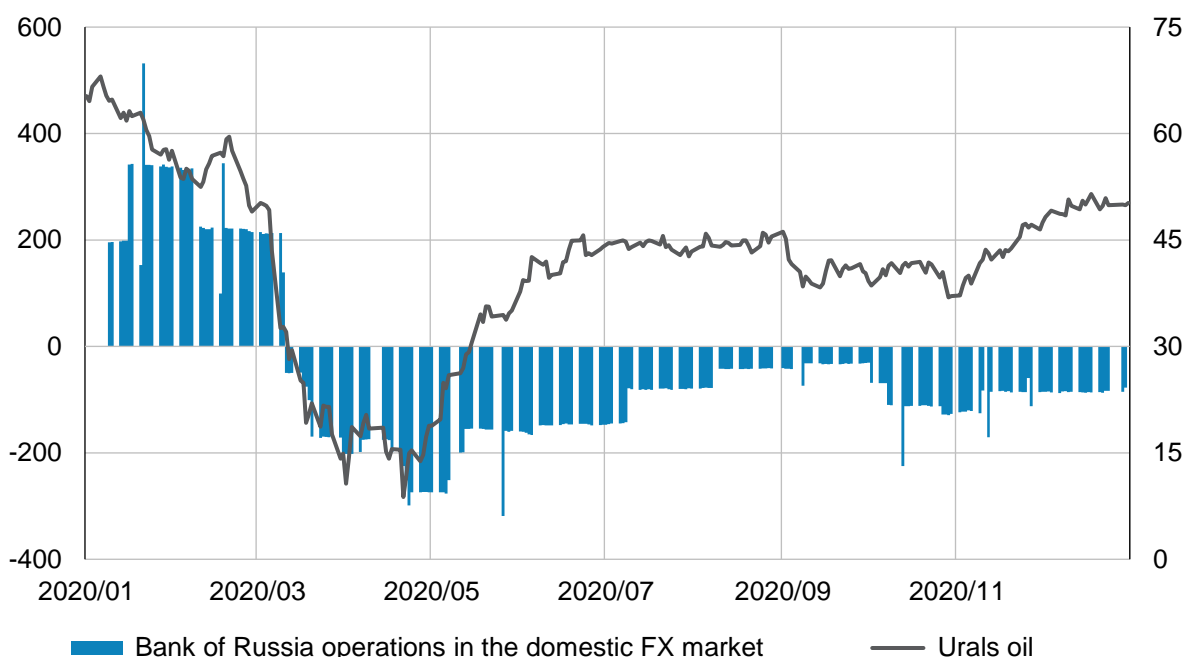
demand. The fiscal stimulus was extensive in scale and aided in adapting the real sector activities to crisis conditions.

Subsequent key rate decisions were made considering the stabilisation dynamics of aggregate demand and the financial market situation. Monetary policy easing was carried out gradually, depending on the situation progress. That was necessary to evaluate the inflation path in a changing environment. As the risk balance shifted towards economic cooling and disinflationary processes, the Bank of Russia was lowering the key rate.

In mid-2020, the Bank of Russia transitioned to a softer monetary policy and kept the key rate steady until mid-2021. Because of the recession caused by the coronavirus pandemic, monetary policy ensured macroeconomic stability but did not address the aspect of financial stability maintenance, which was achieved by means of other measures.

The adverse effects of worsening external conditions were partly mitigated by suspending purchases and then selling foreign currency in the domestic market under the fiscal rule mechanism. The threshold value for foreign exchange sales was set at \$25 per barrel of oil. FX sales helped support the banking sector's currency liquidity and domestic foreign exchange market supply, which were diminishing due to capital drain and reduced foreign currency revenues from falling oil prices. Furthermore, currency sales by the Bank of Russia had a stabilising effect on exchange rate dynamics, partially smoothing out the transition to a new short-term equilibrium.

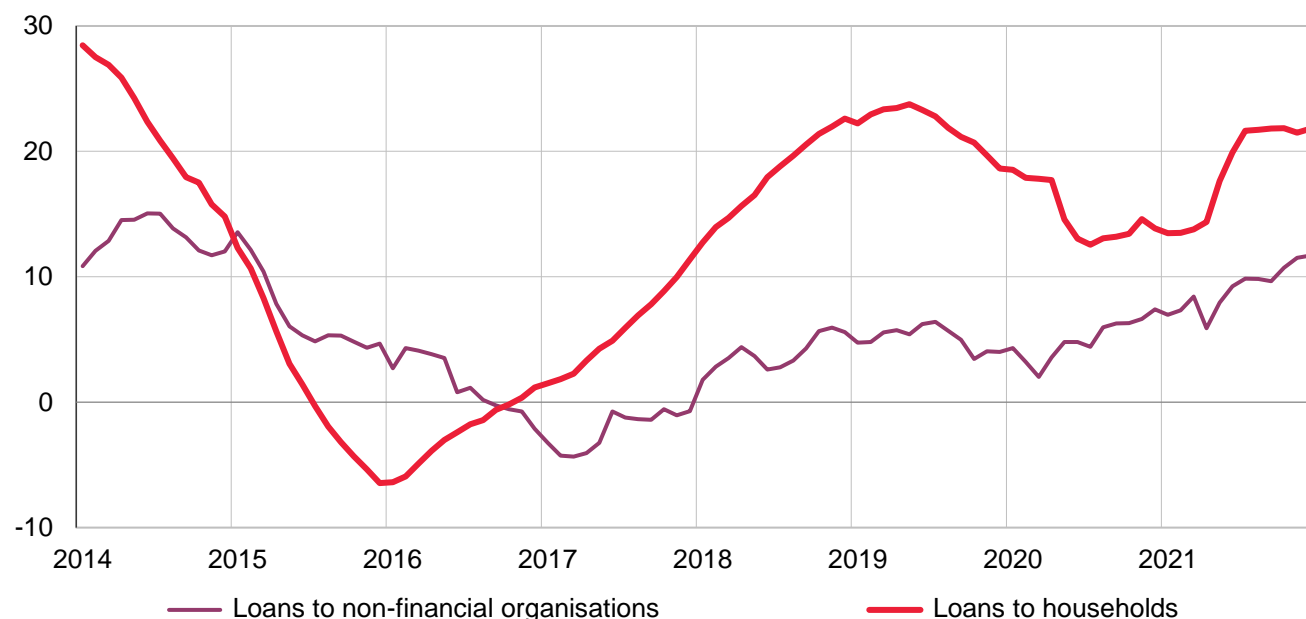
Chart 9. Bank of Russia currency operations (\$ million) and oil price (\$/barrel on the right-hand axis)



Note: Operations >0 — purchases, operations <0 — sales.

Sources: Bank of Russia, Reuters.

The release of previously accumulated macroprudential buffers for retail loans, along with easing prudential provisions, allowed banks to adjust their balance sheets and update profit and loss forecasts to prevent a slowdown in lending. Anti-crisis prudential measures supported the resilience of banks, contributing to the preservation of effective monetary policy transmission. Capital buffer release was carried out for mortgage loans and a portion of unsecured consumer loans. The mortgage capital buffer release amounted to ₹126 billion or 1.6% of the portfolio, while the buffer for unsecured consumer loans was being released as long as losses were recognised, amounting to ₹168 billion of 1.8% of the portfolio.

Chart 10. Growth of real sector lending (% YoY)

Source: Reporting Form 0409101.

Thus, during the 2020 coronavirus pandemic and related negative economic effects, monetary policy and prudential regulation were aligned to stimulate activity in both the real and banking sectors.

Given the need for a gradual adjustment of monetary policy based on an analysis of the economic situation, there was no sharp material reduction in the key rate. In making such a decision, the Bank of Russia took into account a range of aid measures, including its own anti-crisis plans and fiscal incentives. In particular, the increase in government spending in 2019 had a pro-inflationary impact, so the Bank of Russia conducted monetary policy to ensure the achievement of the inflation target in the medium term and avoid 'overshooting' after the acute phase of the crisis.

Evaluating a possible alternative, it can be said that if monetary policy tightening had been implemented at the beginning of the pandemic to stabilise the external shock, the efficiency of such a decision would have been limited, given the low risk appetite in financial markets during the development of the coronavirus pandemic. This could have had a material negative effect on inflation dynamics and economic activity, potentially erasing the positive effect of Russian assets' attractiveness to foreign investors. Meanwhile, other policy measures, including those provided by the Government of Russia, were evaluated by the Bank of Russia as factors independently supporting macroeconomic stability.

Geopolitical crisis of 2022

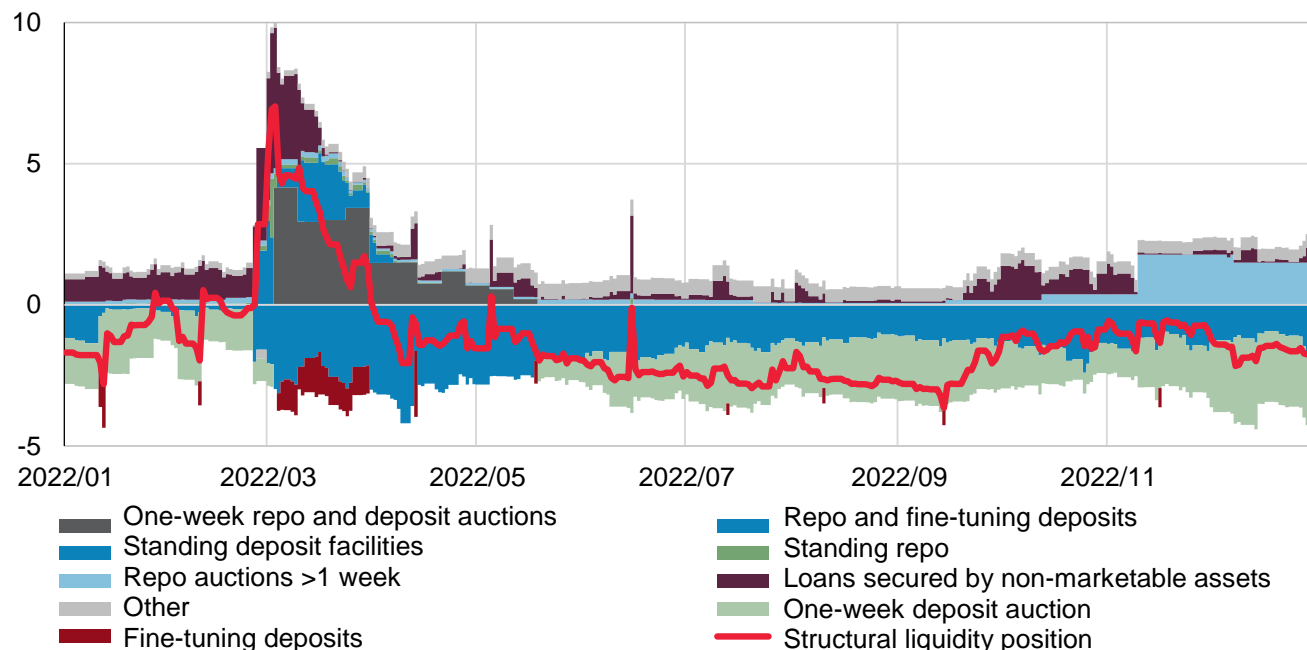
The tightening of international sanctions and a shift in the cross-border financial infrastructure functioning for the Russian economy from 2022 Q1 have increased uncertainty and led to materialisation of systemic risks. Individuals altered their behaviour concerning both savings formation and non-food consumption. Businesses with national capital have faced limitations in conducting certain operations, including those on foreign trade and acquisition of foreign-made means of production and components, while companies with foreign-owned capital have started to reduce or liquidate their presence in the Russian economy. In the financial system, the Bank of Russia's foreign assets, including reserves, have been frozen due to restrictions from external counterparties, and opportunities for cross-border transactions of selected large legal entities have been blocked. Furthermore, capital outflows from the Russian financial market accelerated. Given the anticipated economic

activity downturn and reduced forecasting horizons, the banking sector materially tightened lending requirements for the real sector. Ensuring the smooth functioning of the payment system became the top priority in that environment.

Risks in the money market materialised through several interconnected channels: the outflow of ruble and foreign currency liquidity from the banking sector due to increased cash demand and capital drain, declining asset prices in the financial market, and disruptions in existing counterparty relationships. Large liquidity outflows from the banking sector in late February and early March led to a temporary structural liquidity deficit in the banking sector. As of 3 March 2022, the structural liquidity deficit widened to ₺7.0 trillion. That was driven by an increased cash demand from the households and banks for placement in ATMs and cash desks⁸, as well as a reduction in the volume of funds placed with banks by the Federal Treasury due to uncertainty about future expenses. To stabilise the situation, the Bank of Russia have employed both monetary policy instruments and regulatory easing, as well as measures to restrict cross-border capital flows.

With the materialisation of risks to financial stability, **the efficiency of the money market in reallocating funds decreased**. In the unsecured consumer lending segment, banks were unwilling to place funds due to heightened credit risks and disruptions in established counterparty relationships. At the same time, banks' ability to conduct repo operations was constrained by a lack of market collateral. The introduction of international sanctions, market participants' fears regarding Russian issuers' inability to service their debt⁹, emergency asset sales, margin requirements on repo transactions, increased demand for specific securities, and rising yields on Russian bonds in late February 2022 negatively affected the volume of market collateral on bondholders' balance sheets.

Chart 11. Bank liquidity and Bank of Russia operations (₺ trillion)



Note: Values >0 indicate deficit and provision, values <0 indicate surplus and withdrawal.

Sources: Bank of Russia, Monetary Policy Department estimates.

⁸ Unlike similar episodes in December 2014 and March–April 2020, a higher cash demand in early 2022 came not only from households but also from banks replenishing cash registers and ATMs, which accounted for over half of the cash volume growth outside the Bank of Russia during the period.

⁹ Currency-nominated securities fell the most in price, as their holders were concerned not only about issuers' failures but also the technical impossibility of payments, including due to the blocking of accounts in the National Settlement Depository by European depositories.

The Bank of Russia partially substituted financial market intermediation with its operations, including acting as a lender of last resort. Using its main operations, the Bank of Russia fully met the liquidity demand from credit institutions by switching to weekly repo auctions, increasing funds provision at these auctions, part of which were conducted on an unlimited basis (Bank of Russia, 2022a), and regularly holding bilateral fine-tuning auctions¹⁰. At the same time, there has been a noticeable increase in credit institutions' demand for standing operations¹¹. Due to insufficiency in available market collateral, banks in need of liquidity turned to the Bank of Russia standing lending facility. In that way, the Bank of Russia fulfilled its role as the lender of last resort. Conversely, banks with excess liquidity, out of caution, preferred to place their surplus funds in short-term standing deposits with the Bank of Russia. The Bank of Russia's cancellation of penalties for failing to average required reserves in February¹² and lowering the required reserve averaging ratio¹³ starting from March became an additional liquidity provision tool (Bank of Russia, 2022b). As a result, the volume of required reserves to be averaged decreased by ₺2 trillion, and banks received ₺0.7 trillion in released required reserves from special accounts. Furthermore, the Bank of Russia adjusted some instruments to lessen the operational load on banks and remove funding restrictions: interest rates on long-term loans backed by non-marketable assets were lowered, Lombard loan terms were extended, and individual limits on secured loans and repo operations were increased.

Through liquidity-providing operations (₺9.8 trillion) and the reduction of required reserve ratios (₺2.7 trillion), the banking sector received ₺12.5 trillion within seven days, which was about 10% of the banking sector assets or ₺120.3 trillion (Bank of Russia, 2022c).

The Bank of Russia implemented several measures to preserve and expand the collateral list for monetary policy operations, supporting financial stability (Bank of Russia, 2022d). Within a countercyclical approach to collateral management, the Bank of Russia broadened the Lombard List and eased requirements for non-marketable assets, including regulating the volume of available collateral through adjustment ratios and discounts. Additionally, the value of securities for obtaining liquidity from the Bank of Russia was fixed temporarily at dates prior to the price decrease. Securities trade on the Moscow Exchange was halted to prevent further devaluation of assets¹⁴, including those serving as collateral for interbank repo transactions. This allowed market participants to roll over their repo market positions, adjusting them as the liquidity situation improved. A ban on short sales was also activated, and non-residents at large were prohibited from selling Russian assets. Additionally, domestic bonds were issued to replace Russian issuers' Eurobonds that were frozen in Euroclear and Clearstream. All together, these measures restricted the extent of securities sell-offs. Thus, after the market opened and trading commenced, the volume of forced sales was extremely low. Next, the Bank of Russia announced its readiness to conduct operations with OFZ to prevent a collapse in their quotes. A psychological impact on the market was mainly realized with this statement, as the actual volume of Bank of Russia operations was very small. These measures ultimately limited the decline in asset values, expanded credit institutions' ability to use Bank of Russia liquidity-providing operations, including on a permanent basis, and served as an additional tool for supporting banking sector stability.

¹⁰ The Bank of Russia conducted repo auctions and fine-tuning deposit auctions irregularly when changes in the liquidity situation were significant.

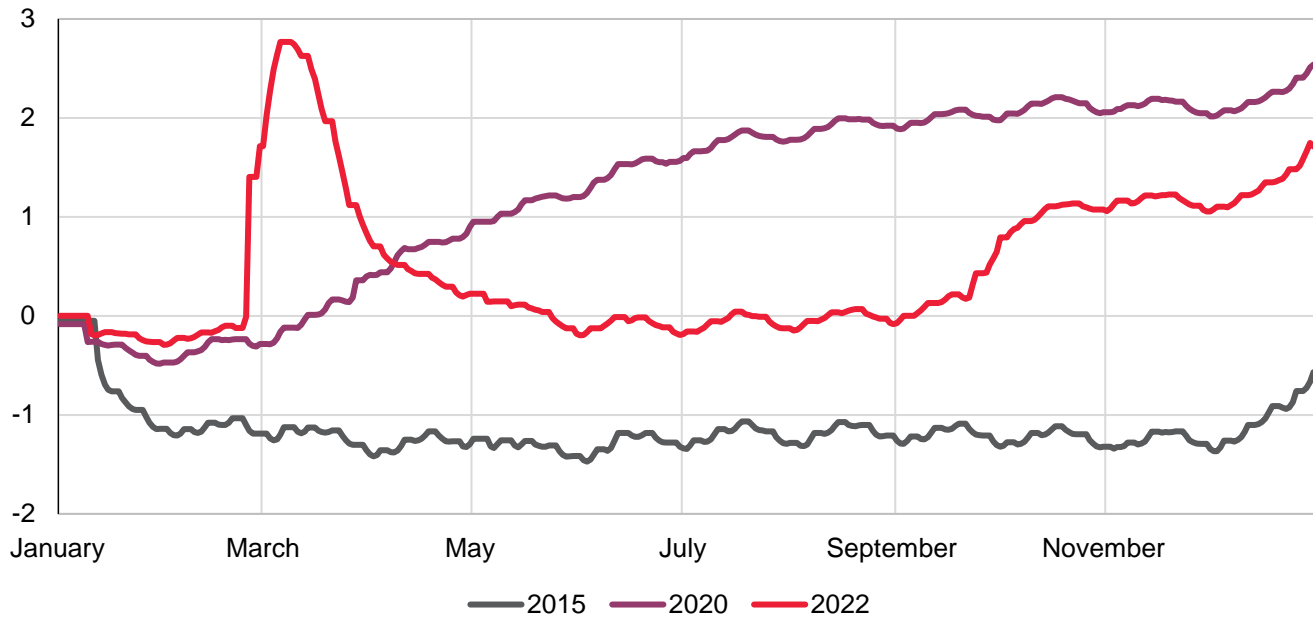
¹¹ Standing facilities were carried out at rates of the Bank of Russia key rate minus 1 pp (liquidity-absorbing operations) and the key rate plus 1 pp (liquidity-providing operations).

¹² During the averaging period of the required reserves from 9 February to 8 March 2022, no penalty was applied if the non-compliance with required reserves averaging did not exceed 20% of the set amount to be maintained on the correspondent accounts (sub-accounts) in that period.

¹³ For all categories of reservable obligations, it was reduced to 2%. Applicable to banks with a universal license and banks with a basic license. The new ratios were applied starting with the regulation of reserves for February 2022. The averaging ratio was also raised to 0.9.

¹⁴ Trading on the Moscow Exchange was suspended from 1 until 21 March 2022. Trading opened in phases: OFZ trading began on 21 March, and the list of tradable instruments gradually expanded in the following days.

Chart 12. Cash dynamics (₽ trillion)



Note: Change >0 indicates an increase in cash volume, while change <0 indicates a decrease in cash volume.
Source: Bank of Russia.

As the liquidity situation in the banking sector stabilised and returned to a structural deficit, the Bank of Russia cancelled some of its anti-crisis measures. With the Federal Treasury resuming operations for placing funds and the return of cash inflows, liquidity in banks restored. The Bank of Russia lowered limits of fine-tuning operations and discontinued to hold them daily in early April (Bank of Russia, 2022e). Starting from the May averaging period, the Bank of Russia resumed conducting weekly deposit auctions instead of repo auctions (Bank of Russia, 2022f). This allowed to absorb the excessive banks liquidity and supported the RUONIA rate close to the key rate in the context of a structural liquidity deficit. The Bank of Russia also reverted to determining collateral value based on market prices and tightened requirements for certain assets accepted as collateral. Amid gradual normalisation of the financial market situation, including maintaining the trend towards dedollarisation of credit institutions' balance sheets, the Bank of Russia made several increases of required reserve ratio (Bank of Russia, 2022g-h) — in April¹⁵ and August¹⁶.

With a prompt response from monetary policy and measures to change external and internal conditions in 2022 Q1–Q2, besides ensuring continual payments, the Bank of Russia considered the following factors:

- the need to maintain demand for ruble nominated deposits;
- the need to restrict the conversion of rubles into foreign currency, including cash;
- the impact of supply shocks on inflation and inflation expectations;
- risks of economic activity decline during the aggregate supply adjustment period.

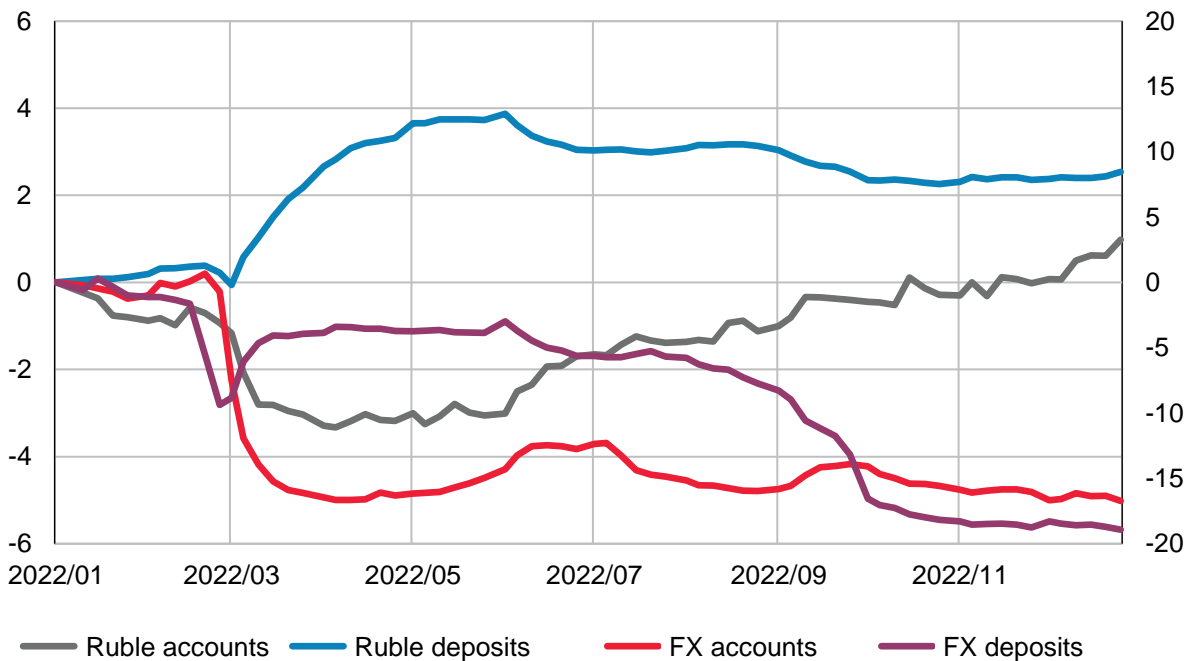
¹⁵ The required reserve ratio was increased to 4% for all categories of reservable obligations nominated in a foreign currency for banks with a basic license and those with a universal license. The new ratios were applied starting with the regulation of reserves for May 2022.

¹⁶ The required ratio was raised by 1 pp to 3% for all categories of ruble-nominated reservable obligations for banks with a universal license and non-bank credit institutions; by 1 pp for banks with a universal license and banks with a basic license; and by 3 pps to 5% for non-bank credit institutions for all categories of reservable obligations nominated in a foreign currency. The new ratios were applied starting with the regulation of reserves for August 2022.

In response to shocks, the Bank of Russia raised the key rate by 11.5 pps to 20.0%. The decision's objective was to increase the propensity to save and limit the transfer of funds into foreign currency. Note that during the period, the banking system, which faced capital outflow from the Russian financial market and restrictions on foreign exchange transactions (for example, on cash supply of a currency from abroad), experienced significant stress.

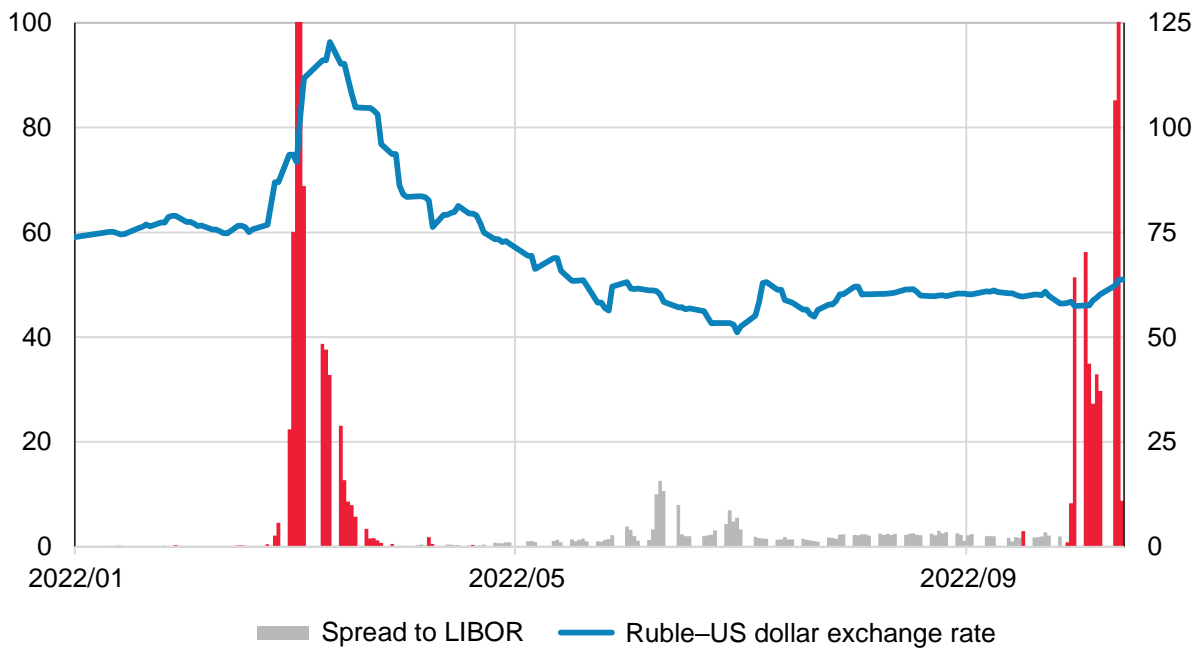
It was impossible to limit the risks of conversion of individual savings and companies' balances into currency, as well as significant withdrawals of funds by non-residents, using only monetary policy measures. Under these circumstances, the Bank of Russia employed measures to restrict cross-border capital flow, including freezing non-resident funds. Both individuals and legal entities were limited to purchase foreign currency and make cross-border transfers, including through higher exchange fees. The Russian Government has supported the foreign exchange market by temporarily introducing mandatory sale of export currency earnings. Exceptional measures, not applied in standard crisis conditions, have stabilised both the foreign exchange market and the currency liquidity of the banking sector. As a result, in particular, individuals transferred a substantial share of their foreign exchange savings into fixed-term ruble deposits, mostly into the high-yield short-term ones.

Chart 13. Dynamics of households funds in rubles (₽ billion) and foreign currency (\$ billion)



Source: Reporting Form 0409301.

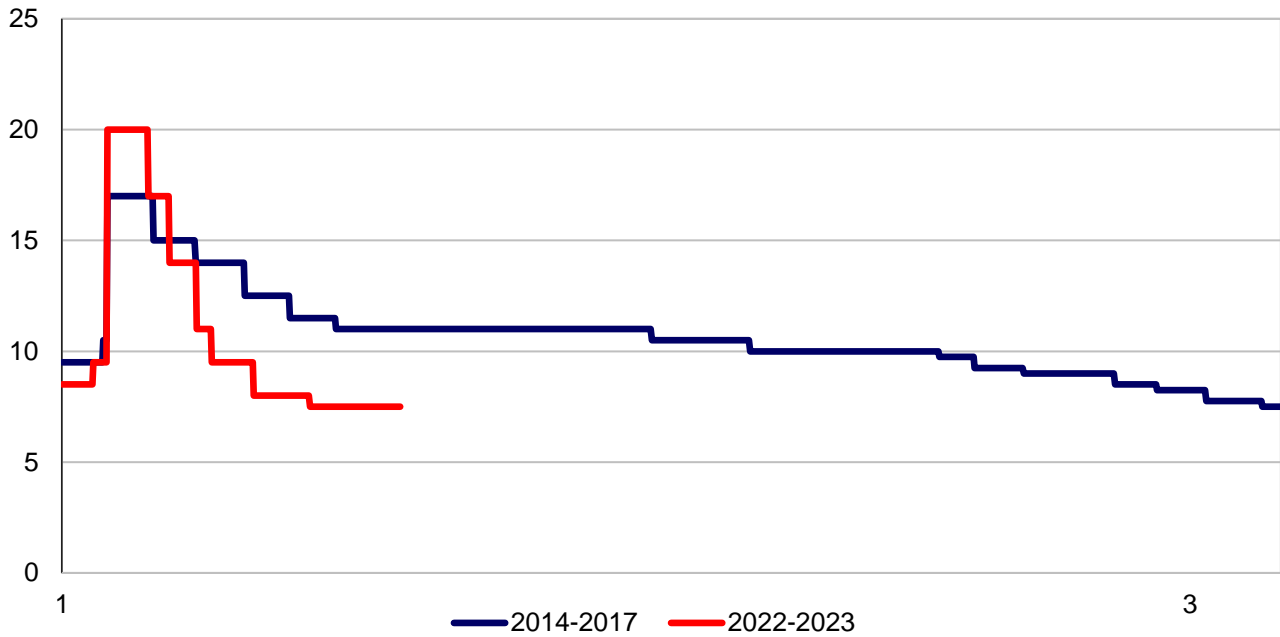
Chart 14. Basis spread for USDRUB currency swaps (pps) and exchange rate (₽/\$ on the right axis)



*Note: Grey-coloured — spread >0 (currency surplus), red-coloured — spread <0 (currency deficit).
Sources: Moscow Exchange, Bank of Russia.*

Then, the experience of monetary policy under the external shocks of 2014 was utilised, allowing the Bank of Russia to lower the key rate more promptly, which supported lending to the economy. It was reduced to 7.5% in September 2022, while the Bank of Russia announced the possibility of achieving the inflation target in 2024. Therefore, as systemic risks began to materialise, monetary policy was employed to maintain financial stability, and after passing the main initial crisis period, the Bank of Russia started easing it, supporting aggregate demand. It was also facilitated by extending the standard horizon for achieving the inflation target to limit potential risks to the real sector under tight monetary conditions. With improving inflation forecasts and stabilising inflation expectations, the Bank of Russia intensified its monetary policy easing, including promptly reducing the key rate based on latest data at extraordinary meetings of the Bank of Russia Board of Directors. As a result, the pace of key rate reduction was more intense than during the similar crisis period of 2014–2015, and the return to the pre-crisis level of the key rate was achieved later in the same 2022 year.

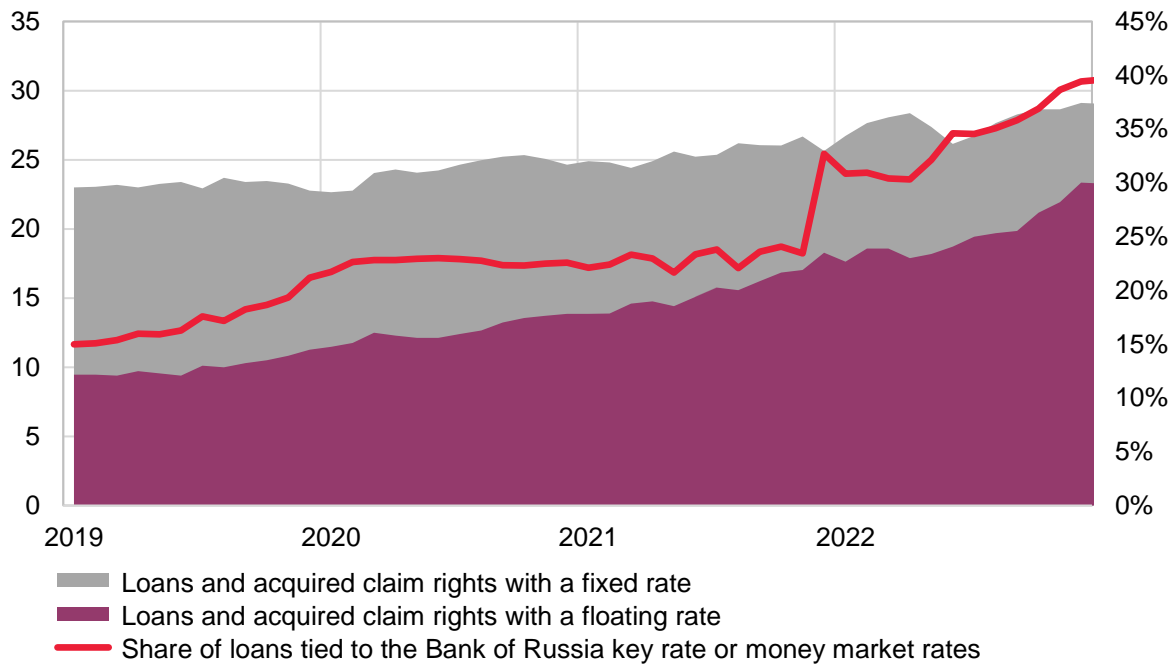
Chart 15. Key rate for 3+ years (% p.a.)



Source: Bank of Russia.

The increase in the key rate impacted banks' net interest income. On one side of banks' balance sheets, a portfolio of floating-rate loans was accumulated, primarily to non-financial organisations. The key rate rise and the increase in money market rates led to higher rates on such loans, contributing to the growth of banks' interest income. On the other side of banks' balance sheets were liabilities with embedded options, such as the possibility of early withdrawal of deposits with almost no fees. Bank creditors used these options to reallocate funds at new, higher interest rates, leading to an increase in banks' interest expenses. To minimise additional costs, banks sought to attract funds for shorter periods by maintaining elevated interest rates on savings accounts and deposits with maturity of 1–3 months. But if credit institutions could manage their net interest margin more flexibly, the growth of interest expenses in the real sector after the interest rate risk had already materialised could not be compensated by changing refinancing terms or hedging in financial markets. Such situation necessitated additional government support measures for borrowers.

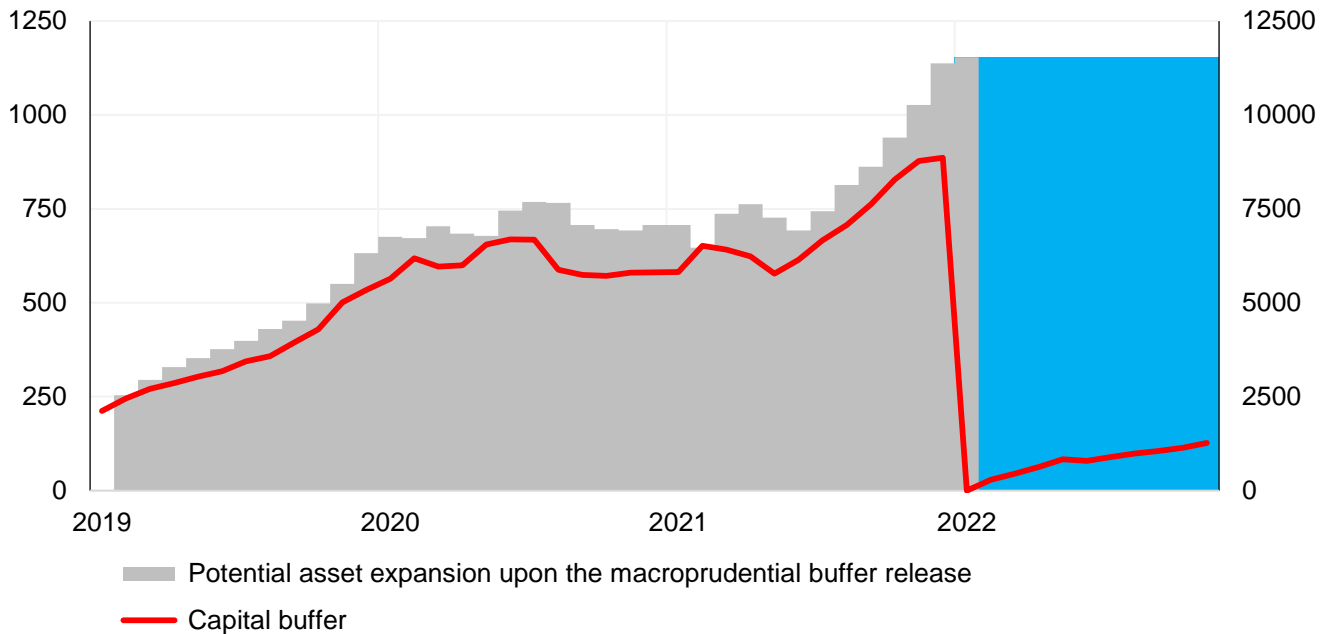
Chart 16. Loan debt (₽ trillion) and share in the corporate loan portfolio (%)



Source: Bank of Russia.

The implementation of preferential programmes for households and non-financial organisations took into account the experience gained during the crisis of 2020. The real sector's stability was further supported by concessional lending programmes that subsidised rates using budget funds. Monetary policy has been easing from 2022 Q2, including fiscal stimulus to prevent excessive overheating. It is worth noting that preferential loans primarily helped economic agents most affected during the crisis adapt and did not contribute to an excessive growth of aggregate demand.

Regulatory easing for banks regarding add-ons to capital adequacy requirements, loan loss provisions, risk premiums in the capital adequacy ratios, as well as liquidity and open currency position ratios helped to ease the crisis effects throughout the banking system. When applying the relief measures, the Bank of Russia took into account the experience of 2020. The macroprudential capital buffer, amounting to about ₽900 billion, was fully released for loans to individuals and claims denominated in a foreign currency to legal entities. The buffer release occurred due to the cancellation of macroprudential risk-weight add-ons for credit claims arisen before 1 March 2022 (Bank of Russia, 2022i). The softer prudential regulation allowed banks to grow in lending in a relatively short time, although credit conditions were more stringent than before the crisis.

Chart 17. Capital buffer (₽ billion) and potential growth of bank assets (₽ billion, right-hand scale)

Source: Reporting Form 0409135.

The further monetary policy implementation required additional evaluation and consideration of the changes in the functioning of transmission mechanism and the influence of banking regulation on lending activity. As a result, a material weakening of the currency channel occurred, while the effectiveness of the credit channel became more differentiated depending on the lending segment. Prudential measures were significantly relaxed, but banks' activity in the credit market was primarily determined by their internal risk assessments. Therefore, from a monetary conditions perspective, the implementation of monetary policy and financial stability measures were carried out using conventional tools but in new, unexplored conditions, typical for crises.

Russian economy is still undergoing transformation; adjustments in the real sector will go on as new contracts in business are signed and domestic demand stabilises under changed conditions. Social and geopolitical changes will continue to play a significant role in this process, either strengthening or weakening the rigidity of the Russian economy's 'landing'.

Thus, it can be concluded that, given the previous crisis experiences of 2014 and 2020 and calibrated for current shocks, conducting monetary policy effectively stabilised both the foreign exchange market situation and inflation expectations in the economy amid the geopolitical crisis during 2022 Q1–Q2. At the same time, maintaining financial stability would have been challenging without employing a range of other instruments, including rarely used restrictions on cross-border capital flows.

2. Monetary policy and prudential regulation

The cases discussed earlier show the use of monetary policy instruments in the light of threats to financial stability. However, as previously mentioned, a certain degree of relationship between the two policies exists even during non-crisis periods. From 2015 to 2020, monetary policy was primarily eased while prudential regulation was simultaneously tightened. The accommodative monetary policy measures were implemented against the backdrop of gradual inflation stabilisation close to the target and declining inflation expectations. Tightening of prudential regulation was carried out in line with the implementation of Basel III microprudential standards for credit institutions and the development of macroprudential regulation for the financial sector within the Bank of Russia, including refining the instruments used and establishing an updated system

of measures to influence market participants' behaviour. The divergent nature of monetary policy and prudential regulation necessitates defining approaches to their interaction. Evaluating the impact of prudential policy on monetary indicators when bank requirements change is essential for optimal monetary policy implementation, which requires a clear distinction between the mechanisms of both policies' influence on economic activity.

The transmission of monetary policy begins with its effect on short-term money market interest rates, gradually extending to interest rates in other financial market segments, including bank operations. This influences monetary conditions, lending dynamics, and more broadly, the structure of banks' balance sheets.

Prudential banking regulation regarding the composition, structure, adequacy of capital and liquidity also impacts banking activities. Aimed at limiting risks in the banking sector, it can directly or indirectly affect both the bank terms of lending to the real sector and the overall growth rates of bank portfolios, as well as price dynamics in financial markets.

Following global practices, the Bank of Russia regulates the banking sector in the format of:

- microprudential policy;
- macroprudential policy.

Microprudential policy consists of ongoing capital and liquidity requirements for banks to ensure their stability (Basel Committee on Banking Supervision, 2010). **The Bank of Russia's microprudential regulation after the 2007–2008 global financial crisis** updated the following key banking regulatory standards:

- 2012–2013 — tightening of capital calculation procedure, introducing new capital adequacy ratios (N1.1 and N1.2 in addition to N1.0; current values are 4.5%, 6.0%, and 8.0%);
- 2016–2021 — implementing a capital conservation buffer (of 2.5 pps) and systemic importance buffer (of 1 pp);
- 2016–2020 — introducing liquidity coverage ratio and net stable funding ratio.

Collectively, these measures significantly enhanced the banking sector resilience. With the targeting of microprudential regulation, ensuring though stability primarily for individual credit institutions, the overall increase in capital and liquidity buffers improved their long-term capacity to absorb systemic risks during materialisation. Furthermore, they had an impact on banks' asset structure and approaches to selecting borrowers, favouring higher quality ones.

Microprudential banking regulation measures on capital requirements and adequacy were implemented gradually by the Bank of Russia, with their impact on lending dynamics and structure spread over time. Additionally, competition for borrowers in the Russian banking sector led to an increased regulatory burden, resulting in a gradual decline in banking business profitability, which in turn affected banks' dividend policies. Thus, the influence of the measures on monetary conditions was limited at any given time, and their impact on key rate decision-making was distributed.

The Bank of Russia's implementation of Basel III liquidity standards was also gradual. Bank demand fluctuations for Bank of Russia operations to provide or absorb banking sector liquidity, caused by the introduction of standards, were considered when determining limits for relevant transactions. For instance, the Bank of Russia accounted for additional or reduced demand for its operations that could arise from banks adapting to new standards. This allowed for more efficient achievement of the operational target of monetary policy and partially limited the potential unpredictable transmission of similar effects on the individual and corporate deposit market. Moreover, there were few such episodes where the impact of standards on rates could have been significant. As a result, Basel III liquidity standards did not have a significant long-term effect on the dynamics of banking operations or the rigidity of monetary conditions.

Macroprudential policy is an additional adjustment of prudential regulation, activated on a countercyclical basis when excessive imbalances accumulate in the financial system (Clement, 2010). Macroprudential policy can be used for segments of bank operations or the financial market.

The Bank of Russia macroprudential policy has been intensively implemented since 2016¹⁷ through instruments affecting capital adequacy and lending structure:

- a countercyclical buffer to the capital adequacy standards of credit institutions, not applicable, set at 0 pp,
- risk-weight add-ons in calculating the capital adequacy standards of credit institutions for mortgage and consumer loans,
- macroprudential limits as direct quantitative restrictions on the proportion of high-risk consumer loans and borrowings in disbursements.

The most active phase of macroprudential policy implementation occurred from 2017 H2, when economic activity was gradually recovering and banks assumed greater risk, leading to increased growth rates in retail lending.

Since 2017, capital adequacy requirements for mortgage loans were raised depending on the loan-to-value ratio (LTV), and from 2018 for unsecured consumer loans depending on the total cost of loan (TCL). Additionally, in 2019 the requirement for calculating debt service-to-income (DSTI) ratio of individuals was introduced, and the Bank of Russia subsequently established capital requirements for retail loans based on the debt burden of borrowers (Bank of Russia, 2017–2019).

Starting from 1 January 2023, macroprudential limits have been established for unsecured consumer loans and loans for banks with a universal license and microfinance organisations (Bank of Russia, 2022j). In 2023 Q1–Q2, the maximum allowable share of loans to borrowers with a DSTI above 80% has been set at 25% for banks and 35% for microfinance organisations; loans with a maturity of over 5 years should not exceed 10% of the total consumer loans issued by banks. Macroprudential limits are set to reduce the debt burden on the households and maintain a balanced structure of consumer lending and microfinancing. Macroprudential limits impose constraints on the lending structure without creating additional capital requirements for banks and microfinance organisations, provided that these limits are observed. Using this instrument enables a more effective influence on systemic risk exposure, allowing monetary policy to focus on ensuring price stability.

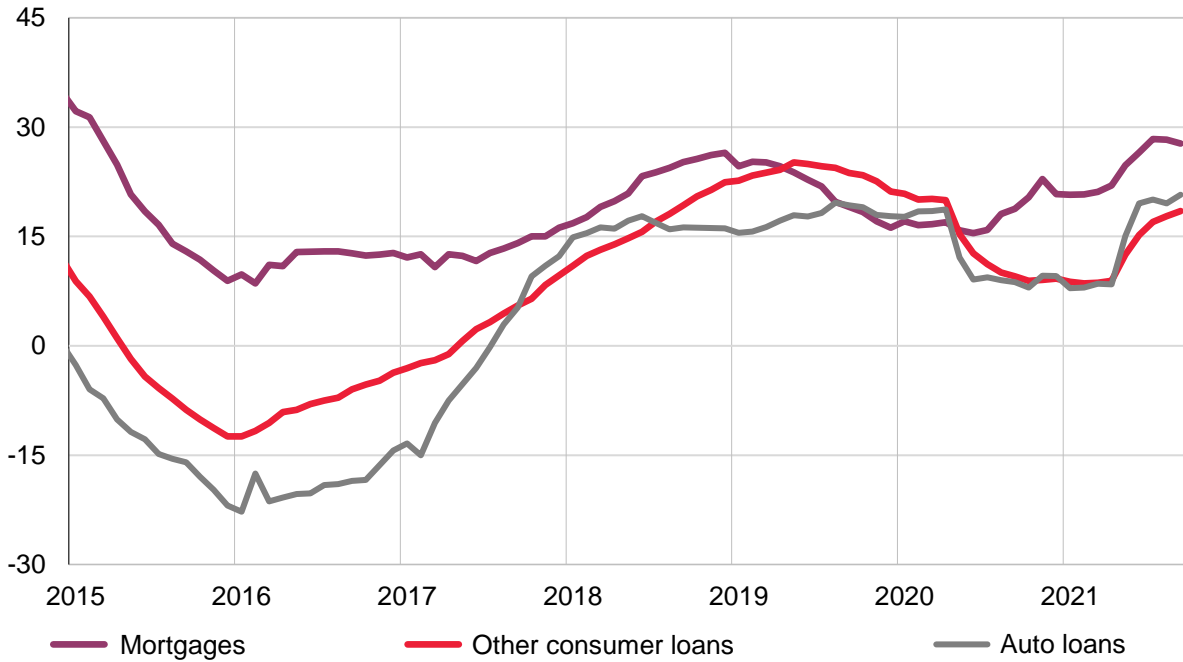
The diverging dynamics of monetary policy and macroprudential policy required the Bank of Russia monetary block to be analysed. The increased capital adequacy requirements could potentially impact monetary conditions through two channels:

- higher interest rates on loans;
- tighter non-price lending conditions.

An increase in the capital tied up to loan issuance could require banks to raise rates in order to compensate for the capital costs. The inability to issue loans at higher rates, particularly due to competition in the banking sector, could prompt banks with little capital headroom to limit the issuance of loans. The outcome of either channel's influence could result in a deceleration of lending.

¹⁷ Before inflation targeting setup, the Bank of Russia implemented countercyclical banking regulation measures through risk ratios in capital adequacy standards and prudential provisions, particularly in consumer lending. In fact, they serve as an example of macroprudential policy, as they aim at limiting systemic risks and apply to all credit institutions.

Chart 18. Retail loan growth (% YoY)



Source: Reporting Form 0409115.

Interest rates

The dynamics of interest rates have not been impacted by the tightening of macroprudential regulation. Therefore, no changes occurred in terms of monetary policy transmission, meaning no adjustments to monetary policy implementation have been required given the tightened macroprudential regulation.

In this context, the question arises as to why there was no increase in loan interest rates following the introduction of new macroprudential policy measures. To address this question, one should refer to the formula that determines the interest rate used by banks. The pricing practice in the banking sector¹⁸ is structured in such a way that interest rates on loans separately account for return on equity and capital adequacy.

The formula for calculating the capital adequacy component is as follows:

$$\text{NET CAPITAL COST} = \text{RW} \times \text{CAR}^{\text{TARGET}} \times (\text{ROE}^{\text{TARGET}} - \text{ROE}^{\text{RISK-FREE}})$$

where

- RW — represents the risk ratio for the asset, considering macroprudential buffers;
- CAR^{TARGET} — target capital adequacy;
- ROE^{TARGET} — refers to the target return on equity for the asset or for the bank at large;
- ROE^{RISK-FREE} — internal assessment of risk-free return on equity.

Changes in the total values of the risk ratio (capital adequacy ratio), as well as banks' adjustments to target and risk-free return on equity estimates, can influence the value of this component and subsequently the final interest rate on the loan. According to this pricing formula, macroprudential capital adequacy

¹⁸ The methodology of calculating net worth can be derived from basic approaches to risk assessment and investment yields, and is universally applicable to the approaches of treasury and financial planning departments in banks.

requirements for retail loans could have potentially exerted upward pressure on interest rates between 2018 and 2020. Such an increase in loan interest rates would have required the monetary policy adaptation, meaning a downward adjustment of the target key rate path to ensure that inflation in the forecast aligned with the target. Since the dynamics of interest rates on loans de facto did not change, the monetary policy did not respond directly to the macroprudential tightening measures.

Unresponsiveness of interest rates on loans to the adopted macroprudential policy may have appeared for reasons following.

Thus, the interest margin on loans enabled banks to maintain their return on equity within some deviations from the target level of the reasonable scale. In addition, competition for borrowers prompted banks not to raise interest rates and accept a decrease in return on equity to preserve their market share.

Moreover, the specifics of applying macroprudential buffers are associated with factors such as banks' expectations of reduced macroprudential buffers in the future and, consequently, the lack of need to adjust urgently current operational parameters; automatic release of macroprudential buffers as the principal is repaid for mortgage loans due to linking additional capital requirements to LTV.

A change in the loan portfolio structure resulting in a reduction of loans in high-risk segments at increased rates and a growth in relatively low-risk loan issuances with simultaneous rate increase thereon (Bank of Russia, 2021b). Therefore, the average rate for newly issued to households loans remains unchanged.

Finally, savings can be gained on capital costs due to spread, among the largest banks, of the internal ratings-based approach to assessing risk ratios for selected assets.

Non-price volumes and conditions of lending

Theoretically, the stability of interest rates in response to changes in macroprudential regulation requirements may not reflect adjustments in banks' risk assessments and loan disbursements compared to planned indicators. Banks regulation of loan volumes, besides interest rates, can proceed through non-price lending requirements for borrowers, such as income and personal parameter metrics, as well as determining lending limits. Thus, the impact of macroprudential policy on loan disbursement rates could also be materialised through this channel.

The Bank of Russia used various approaches to evaluate the influence of prudential policy on lending growth rates. Both forecast methods and data analysis were used for this purpose. Based on the conducted research, two main conclusions are made regarding the influence of new macroprudential measures on lending:

- risk-weight add-ons cannot be said to have a significant impact on the growth rates of new consumer loan issuance;
- due to the influence of add-ons, banks start to change their lending structure in favour of loans requiring less own funds (Bank of Russia, 2021b), meaning those with lower TCL.

The primary possible explanation for the weak responsiveness of lending dynamics to tightened macroprudential policy may lie in the substantial capital adequacy buffers, particularly in universal banks, which allow them not to limit planned loan disbursement rates without violating capital adequacy requirements, including macroprudential buffers, for up to one year (Miroshnichenko, 2021). Therefore, when forecasting their main performance indicators, banks may conclude upon announcing new macroprudential measures that their existing capital adequacy reserves are sufficient to support lending activities that were planned. Typically, in the first quarter, banks audit their profits for the previous period, allowing them to account for it as a source of capital and restore adequacy ratios to their initial values. This provides the opportunity for sustainable growth of the loan portfolio.

To conclude, it is noted that a detailed analysis of retail loan disbursements from selected bank samples demonstrates the impact of macroprudential regulation on growth rates of loans with the riskiest parameters and the overall restraining effect of macroprudential regulation on banks, particularly those active in retail lending

segments, predominantly consumer one (Penikas, 2021). Some positive influence of macroprudential policy measures on financial stability risks was thus observed through cooling down certain vulnerable lending segments, i.e. altering the loan portfolio structure towards lower riskiness, and by limiting the activities with excessive risk appetite.

In any case, no significant impact of the adopted macroprudential measures on macroeconomic aggregates was observed, therefore, revision of the key rate path by the Bank of Russia was not required. For this reason, despite the tightening of macroprudential regulation, monetary policy was implemented without any special adjustments to it. Note that whenever decisions on the dynamics of the key rate were made, both latest decisions in the macroprudential regulation and then-current monetary conditions, i.e. incoming data on lending terms and volumes, were necessarily taken into account.

III. CONCLUSIONS

Since late 2014, when the key elements of the inflation targeting had been implemented, the Bank of Russia, in its monetary policy conduct, continued facing the accumulation and materialisation of financial risks of varying scale. Overall, during these years, the Bank of Russia has followed separate goal setting for monetary policy and prudential regulation measures, meaning that under normal conditions, the key rate was changed only in response to factors influencing inflation, while the task of limiting systemic risks was addressed using macroprudential instruments. If systemic risks did realize, the Bank of Russia's priority objective was to ensure financial stability. This approach in the long run looks optimal, but it does not imply that the toolkit of both policies has no room for improvement.

The Bank of Russia experience indicates that the system of operational monetary policy instruments, designed with potential risks, liquidity shock characteristics, and financial sector structure in mind, serves as a barrier to the spread of financial risks. The inflation targeting strategy chosen by the Bank of Russia not only promotes macroeconomic stabilisation but also leads to banking sector liquidity stabilisation with abandoning foreign exchange interventions. The approach to managing short-term money market rates, where the central bank relies on market activity and extensively uses all its own instruments, including required reserves, enhances the banking sector's resilience to risks.

Another conclusion reveals the necessity to have as complete a toolkit as possible for implementing various types of policies, in order to be able to limit the undesirable consequences of systemic risks materialisation promptly and with minimal costs. The past crisis episodes have demonstrated that the combination of such instruments provides the maximum effect.

The advancement of microprudential and macroprudential approaches to banking policy has enhanced regulators' ability to manage financial risks through a regulatory system. Amid the growing complexity of prudential regulation for banks, the Bank of Russia faced a new challenge when conducting monetary policy — evaluating the impact of changes in bank regulation on monetary conditions and the necessity to adjust the key rate.

Regarding the existing toolkit for executing optimal policy, our experience demonstrates the adequacy of monetary policy instruments. This primarily pertains to instruments associated with the Bank of Russia's role as the lender of last resort. As far as prudential measures are concerned, their development is far from complete. For instance, the Bank of Russia is only at the initial stage of developing a system of macroprudential limits, the efficiency of which is yet to be assessed. It is a task for the future. Adjusting such a system can impact monetary conditions and decisions regarding the key rate.

The issue of correlation of individual prudential regulatory measures with each other is quite important. The Bank of Russia's decisions within anti-crisis packages, related to easing requirements for forming loss provisions and deferred revaluations for exchange rates and asset prices, essentially represent a disguised reduction in capital adequacy ratio requirements. These decisions may have a major drawback: the absence of a clear, transparent picture of the situation, leading to create a duality in financial state of banks — with and without regulatory forbearance, if it becomes not temporary but de facto permanent (Tulin, 2020). This situation, besides being complicating in terms of decision-making for both the regulator and economic agents, may also entail delayed risks. They are related to the incomplete comparability of data when analysing long time series, which can decrease the effectiveness of the model apparatus¹⁹.

¹⁹ This issue can be partially solved by focusing on schedules of cancellation of regulatory forbearance, in which the Bank of Russia transparently reflects the periods for possible deviations from regulatory standards. However, assessing the true values of prudential requirements and other banking metrics during crisis periods, i.e. episodes of non-linear changes in indicators, still requires more information than just the presence or absence of regulatory requirements.

The regulation of systemic risks and finding the optimal strategy for the regulator is challenged by the fact that the development of toolkit and approaches' adjustment are slower than the changes in the financial market situation. It is natural for a financial product to experience popularity and rapid growth, and only when significant risk accumulation is identified and its specifics analysed does the regulator react.

This principle applies equally, if not more so, to new market segments related, for example, to the development of new technologies. For instance, the widespread use of digital financial assets could potentially generate risks to financial stability that are currently difficult to evaluate. In this context, the regulator needs to further enhance its efforts in early identification of such risks.

Another important aspect of the Bank of Russia's activities is the continued development of a model analytical and forecasting apparatus that helps assess the reciprocal interaction of two policies over a foreseeable time horizon. An example of such work could be assessing the macroeconomic consequences of implementing macroprudential limits.

APPENDIX 1

The appendix includes material that supplements and elaborates on the details of the interconnections between monetary policy and financial stability. For a wider understanding of the monetary policy and financial stability, it is recommended to look at the provided materials.

An historical perspective on monetary policy and financial stability

The views of both academic research and regulators on the relationship between monetary policy and financial stability have evolved over time. Factors such as the development of financial systems and the globalisation of the world economy have had the most significant impact on this evolution. Recent crises have highlighted the need for more systemic approaches to addressing issues of monetary policy and financial stability.

With the spread of inflation targeting approaches in advanced economies and up until the early 2000s, price stability was viewed as a necessary and sufficient precondition for financial stability (Schwartz, 1995). Price volatility for consumer and investment goods was considered a hindrance to creating business plans, including investment ones, and to the functioning of the financial sector as an intermediary in the economy.

The dotcom bubble, i.e. a rapid rise in technology and digital stock equity, in the early 2000s in the USA, drew the attention of regulators and researchers to the potential use of monetary policy for addressing market imbalances and minimising possible negative consequences. Meanwhile, the financial market crisis had a moderate effect on the real sector (Saint Louis Fed, 2021), and the issue of negative impacts of risks to financial stability on the economy did not come to the fore. The ultra-accommodative monetary policy of the Federal Reserve System, which facilitated successful economic recovery, convinced regulators that there was no need to separately account for financial risks, as their effects could be mitigated by monetary policy measures.

The global financial crisis of 2007–2008 demonstrated that maintaining soft monetary conditions, even amid price stability, led to an accumulation of risks to financial stability (Andreeva & Shulgin, 2015). Post-crisis monetary policy measures can themselves become a factor in creating new risks to financial stability: the formation of a housing bubble and associated systemic risks occurred, to some extent, under ultra-low interest rates established to support the economy after the dotcom crisis.

At the same time, the absence of price stability is generally insufficient for accumulating risks to financial stability. Before the global financial crisis of 2007–2008, the Russian economy experienced relatively high inflation volatility, yet there was no accumulation of risks to financial stability due to the absence of price stability in terms of inflation targeting²⁰.

The current consensus is that **price stability does not ensure financial stability, and the price volatility in terms of inflation targeting does not necessarily pose a risk to financial stability**. Price instability can intensify threats to financial stability, for example, if it occurs due to capital flows. The materialisation of risks to financial stability can affect price stability, for example, by accelerating inflation due to changes in the national currency exchange rate. However, there is no overall consistent pattern, and depending on the specific conditions in the economy, risks to price and financial stability can have either no interconnection or divergent cause and effect relationship.

Analysing the impact of monetary policy on the economy cannot be limited to looking separately at the real sector or a fragmentation assessment of its influence on financial indicators, primarily monetary ones.

²⁰ Higher inflation may result in increased dollarisation; however, this scenario is not universal and is associated with a specific external risk. Additionally, dollarisation can evolve without macroeconomic instability, such as in an economy with a higher share of exports.

Thus, the key rate as a non-differentiated instrument can affect various financial indicators. Monetary policy can also influence risk appetite in the financial sector by limiting or increasing risks to financial stability without directly affecting the stability of individual financial institutions in the short term (Borio and Zhu, 2008). Additionally, monetary policy may indirectly affect the financial sector through the behaviour of financial institutions' clients²¹. The effect of monetary policy on asset prices and lending activity may vary: individual segments of the financial market, such as the stock market, may be less susceptible to the influence of monetary policy than lending and the debt segment of the financial market (Gali, 2014).

The asynchronous development of trends in the real economy and the financial sector influences the monetary policy outcomes and risks to financial stability. A deceleration in financial indicators may impede economic acceleration, while a responsive soft monetary policy could heighten the volatility of financial indicators and establish conditions for a rapid increase in financial asset prices and the accumulation of imbalances in the financial sector.

When evaluating the monetary impact on systemic risks, the influence of monetary policy on financial stability was typically examined without considering macroprudential regulation measures. In this context, the regulatory inefficiency is not presupposed. This isolated approach is advantageous as it allows for the analysis of the (in)appropriateness of using monetary policy to ensure financial stability, independent of external conditions for monetary policy.

Academic research

Academic analysis stems from the need for interaction between monetary policy and macroprudential policy, with a focus on assessing the optimality of measures both to achieve price stability and limit systemic risks. This approach is grounded in the idea that monetary policy, which influences nominal macroeconomic indicators, can potentially contribute positively to reinforcing the resilience of the financial sector.

The principle of separating targets between monetary policy and financial stability is applied in the context of optimal and effective macroprudential policy. In other words, in case of a possibility to fine-tune macroprudential policy regulating financial imbalances effectively and precisely, there is no need to utilise monetary policy for ensuring financial stability (Van der Ghote, 2020). In this case, the objective of optimal monetary policy implementation will be to maintain price stability in line with the conventional inflation targeting regime (Caballero & Simsek, 2019).

At that, monetary policy should consider changes in financial conditions within the economy that arise due to the influence of macroprudential policy. Thus, changes in the capital burden of banks in the short term may restrict lending and economic activity. Therefore, in the monetary policy implementation, the regulator needs to take into account the effects of macroprudential regulation, how it impacts economic activity and inflation. Macroprudential regulation of debt burden fluctuations can help avoid a zero lower bound situation when the key rate is close to zero (Ferrero et al., 2018). In this case, macroprudential regulation will mitigate risks to financial stability, meaning that even if they materialise, the decline in economic output will not be as significant as it could have been. From the perspective of monetary policy, this would require a smaller decrease in the key rate. Employing such a countercyclical instrument, on the other hand, may facilitate economic recovery, alleviating some of the burden on monetary policy during the expansionary phase of the cycle. This effect of macroprudential regulation essentially represents a positive externality for monetary policy: its performance can be enhanced, even with independent macroprudential policy that does not consider any monetary policy objectives.

The reverse relationship should be considered as well; thus, the set of macroprudential measures required to impact the economy also depends on the rigidity of monetary policy (Mendicino et al., 2020). The influence

²¹ For example, we can refer to the influence of the interest rate channel of monetary policy transmission on the tendency of the real sector to save, which, all else being equal, affects the dynamics of changes in the financial sector balance.

of macroprudential measures may vary at the zero lower bound (Chen et al., 2020). Therefore, tightening macroprudential policy in the short term could negatively affect economic activity due to reduced lending activity. If monetary policy is close to the zero lower bound at this time, supporting the economy through key rate reduction becomes unfeasible, and macroprudential regulation will result in inflation deviating downward from its target.

Incorporating financial stability into monetary policy can serve as an additional measure to limit systemic risks, particularly during accumulation, if prudential regulation measures prove ineffective (Stein, 2019). In this scenario, the regulator deviates from conventional goal-setting when implementing monetary policy and contributes to limiting risks to financial stability by setting the key rate above or below the level required for conventional inflation targeting (Farhi & Werning, 2016). While macroprudential policy typically targets segments of the financial system, monetary policy can influence all participants in economic activity (Stein, 2012). As monetary policy affects not only lending rates and volumes but also the risk appetite of financial system participants (Dell’Ariccia et al., 2014), it can decrease the likelihood of a financial crisis in the short and medium term (Boissay et al., 2021). Monetary and macroprudential policies tend to be complements when the degree of pass-through of credit spreads into marginal costs and prices is sufficiently high (Styrin & Khotulev, 2020). Monetary policy, with credit-cycle considerations, can be effective if financial frictions are present — a desynchronisation with and deviation in credit rates from the dynamics of the key rate (Andreev et al., 2020). Preventive monetary policy can effectively complement macroprudential policy in response to anticipated shocks to financial stability related to suboptimal investment allocation and urgent asset sales, or fire sales, in financial markets (Styrin & Tishin, 2021).

The interaction between monetary policy and macroprudential regulation can also generate additional effects for an economy that exports commodities. Furthermore, monetary policy which hinders systemic risks may prove more effective than conventional targeting in theoretical simulations when there is a high volatility in the prices of exported goods (Kozlovtceva et al., 2019).

1. Monetary policy and external risks to financial stability

External risks arise outside the national economy due to changes in the external environment: revaluation of countrywide risks, portfolio rebalancing by foreign investors due to interest rate adjustments, including, but not limited to, under the monetary policy impact; changes in the resident corporate liabilities structure; alterations in the financial infrastructure's functioning mode; and regulatory restrictions on cross-border investments or capital flows. Note that systemic risks do not stem from changing terms of trade, since the latter initially impact the real sector rather than the financial one. External systemic risk can manifest itself through the dynamics of cross-border financial flows, and to isolate effects related to standard financial operations, it is necessary to analyse the financial account of the balance of payments. Cross-border capital flows can influence the parameters of the national financial system, including monetary conditions and asset prices.

1.1. Cross-border capital flows

Material changes in the external environment involve adjustment of monetary policy. The adaptation is accompanied by the establishment of a new equilibrium with a modified exchange rate level and balance of payment accounts. Conventional monetary policy is adjusted in response to changes in external conditions to ensure the inflation target achievement.

At the same time, monetary policy also affects the price evaluations of national assets by the external sector. Economic activity, interest rate levels, and inflation dynamics are all considered when assessing risks and prospects for purchasing national assets by the external sector. As a result, monetary policy influences the dynamics of cross-border financial flows and can potentially be used to mitigate risks associated with external conditions. With volatile cross-border capital flows, monetary policy can thus theoretically be used to establish a new short-term equilibrium with lower risks to financial stability.

The impact of monetary policy at that may vary depending on the parameters of the national currency exchange rate regime. Flexible exchange rate policy can mitigate the impact of cross-border financial flows on operational indicators for real sector organisations, such as exporters, and intensify it for banks.

Macroprudential regulatory response can also limit negative effects related to external risks, so monetary policy should at least consider this potential influence. Capital controls (typically not regarded as a macroprudential instrument but as a specific measure of foreign economic policy) can potentially further limit external risks, but they are not common in current practice²².

Simultaneously, cross-border capital flow may decrease the effectiveness of monetary policy in smoothing out the real cycle²³. Thus, a combination of instruments from different policies can be used to maximise the reduction of negative external effects²⁴.

When analysing external risks, the policymakers should differentiate cross-border capital flow into inflows and outflows. It is important, since risks can build up with varying dynamics, and capital inflows and outflows may have asymmetric effects on financial conditions and the real cycle.

Cross-border capital inflows may contribute to the gradual accumulation of systemic risks due to changes in monetary conditions and increased exposure of assets in the financial sector to market risk. Higher external debt of financial institutions can generate additional foreign exchange risks²⁵. Attracting cross-border financial flows, in turn, may contribute to the overall easing of monetary conditions through foreign borrowings at lower interest rates, while also contributing to the national currency strength. Domestic lending may excessively expand if banks attract foreign funding at lower interest rates and can reduce rates on domestic loans²⁶. In this situation, asset prices can excessively grow, leading to overheating in the domestic market.

Tightening in monetary policy can help attract foreign capital by increasing the appeal of domestic conditions for foreign investors. In this case, monetary policy will not be able to constrain internal overheating and systemic risks precisely because of the increase in cross-border capital inflows it has triggered. An economy exporting commodities is less likely to encounter the issue of excessive capital attraction at tightening in monetary policy, as commodity price cycles and monetary policy rigidity cycles are synchronised, all else being equal: tightening monetary policy is needed when a commodity price downturn is accompanied by a reversal of capital flows.

Regulatory easing potentially leads to a reduction in foreign capital inflow, but the impact on domestic indicators may be uneven and vary from sector to sector. Lower interest rates can contribute to the accelerated growth of certain segments of the domestic market. This may be, for example, the mortgage market or the stock market, which is a relatively riskier savings instrument.

Cross-border capital inflows often raise less concerns from the standpoint of the regulator, especially in emerging market economies, due to the assumed ability to effectively control it through foreign exchange interventions. At the same time, during such periods, external systemic risks accumulate, which may materialise later, usually when the inflow changes to the outflow. As mentioned, the use of monetary policy in these conditions to ensure financial stability is complicated. Therefore, in case of a strong cross-border capital inflow, it is optimal to maintain the monetary policy objective of ensuring price stability, while reduction of external systemic risks should be carried out through financial regulation.

Cross-border capital outflow is usually accompanied by the domestic currency depreciation and a fall in asset prices, which negatively affects the indicators of the debt burden in the economy and the performance of financial

²² For more details, see the subsection Restrictions on cross-border capital flows in Appendix 1.

²³ For more details, see the subsection Monetary policy 'trilemma' and 'dilemma' in Appendix 1.

²⁴ For more details, see the subsection Monetary policy within the Integrated Policy Framework in Appendix 1.

²⁵ The external debt of non-financial organisations can also cause crisis, but the risks generated by the financial sector that can be influenced by the financial regulator need to be analysed.

²⁶ The influence of cross-border capital flows on lending dynamics is theoretically considered a possible effect due to the growth of banks' capital base, but an increase in banks' liabilities is not necessary for expanding the banking sector's balance sheet, and credit 'overheating' in the domestic market is not a direct result of foreign capital inflow. FX lending in the domestic market can be the exception — in this case, banks can increase the supply of loans.

institutions. Refinancing the external debt may become more complicated at large, and even regardless of its volume – if capital outflows are caused by a strong decrease in risk appetite in world markets.

The efficiency of **restriction of capital outflow through monetary policy tightening** may depend on the scale of the key rate increase, the reasons and mechanism for changes of a country risk rating by foreign investors. Thus, an increase in the key rate that will make up for an increase in the risk premium to foreign investors may highlight the appeal of the domestic market for foreign capital. But at the same time, its attractiveness for foreign investors may grow not enough if monetary policy tightening itself is considered as a factor in their decision-making. In this case, investors will expect a slowdown in economic activity following the increase in interest rates. Expectations may also discourage foreign investors from buying domestic assets because of the potential for their price downturn. Moreover, even in an environment of relatively attractive interest rates, the market participants may not always get the accurate country risk analysis (e.g. due to the strong influence of non-economic factors).

Generally, in the context of cross-border capital outflows, monetary policy easing is not applied, as such a policy runs counter to both inflation and financial stability targets. The monetary policy may shift to easing after systemic risks have materialised and a new equilibrium has been reached. If expectations of rising asset prices accompanied by falling interest rates are formed at the same time, this combination becomes attractive to foreign capital.

As mentioned previously, capital outflows often trigger the materialisation of external systemic risks accumulated in prior periods, including periods of capital inflows. These risks can impact directly, e.g. when it concerns the inability to refinance external debt, and indirectly, when the domestic currency weakens, accompanied by asset prices downturn in financial markets. Monetary policy tightening, which typically accompanies episodes of capital outflows, can sometimes partially alleviate emerging negative effects by increasing the appeal of the domestic market to foreign investors. The optimal monetary policy response depends on the factors that triggered the capital outflow and may necessitate fundamental changes as well. For example, this could involve abandoning the managed exchange-rate regime. Compensation for the negative effects that arise when external systemic risks materialise will likely be more efficient if the regulator employs other available instruments alongside monetary policy measures. The toolkit may include foreign currency refinancing system and regulatory easing. Measures to mitigate the impact of capital outflows can also vary depending on whether the cyclical or structural component prevails in the volatility of cross-border capital flows.

Asian financial crisis

The Asian financial crisis of 1997 – 1998 was caused by the banking regulatory framework inadequate to the realities of the financial market. A sudden capital outflow from Southeast Asian economies triggered high volatility in financial markets. The crisis further spread to Asian economies, as well as non-Asian emerging markets economies, including Russia. The background of the crisis in these economies was laid by the massive capital inflows in the mid-1990s. This led to the numerous domestic currency depreciations, high inflation, and losses in the real sector.

The crisis began in Thailand in 1997 when the Thai baht fell after the government unpegged it from the US dollar, due to a shortage of foreign currency caused by drastic capital outflows. The increased capital outflows resulted in an accelerated devaluation of the baht, resulting difficulties for economic agents to service the external debt. Against this backdrop, capital outflows started to affect other economies across the region, reflecting the risks reassessment by foreign investors risks.

Due to the depreciation of national currencies, the external debt-to-GDP ratio in some economies nearly doubled. The large share of short-term liabilities in external debt structure created risks for its sustainability: in some economies (e.g. Indonesia), short-term external debt exceeded 100% of international reserves. Export growth amid weak domestic currency only partially offset problems related to the growing external debt burden.

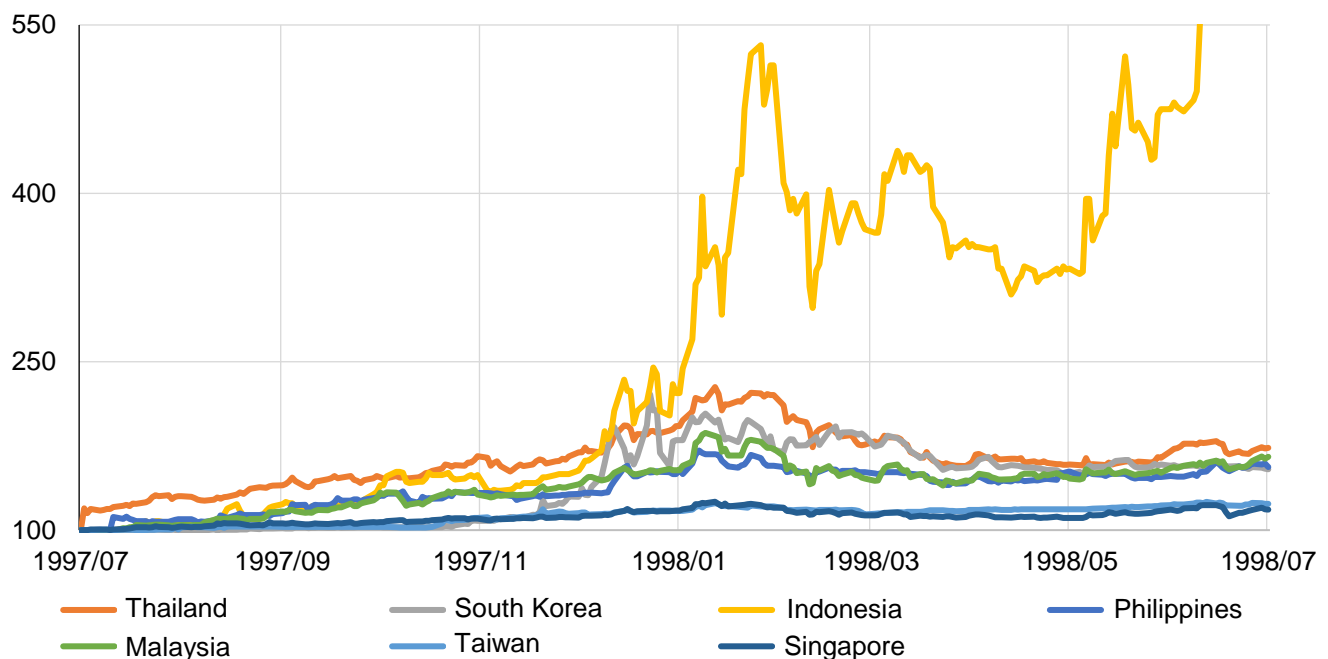
Negative effects spread to the banking sector, partly due to deteriorating loan quality. Bank loans in local currency averaged around 70% of GDP in the countries affected by the crisis. This occurred because regional economic growth was accompanied by a credit boom, with annual credit growth rates exceeding 50%, leading to the accumulation of internal risks. Troubles in Asian economies were compounded by poor corporate governance and inadequate banking regulation and supervision during the banking sector development. The Basel I concept of bank regulation implied too low risk ratios for banks' short-term claims on other banks and financial institutions.

External debt build-up was also driven by the underdevelopment of national financial market. For instance, there was virtually no bond market in the national currency. A balance of payments disequilibrium led to the accumulation of external risks, despite positive indicators of sustainable economic growth.

The annual growth in gross output in Southeast Asian economies was 5–10%, asset prices were rising — real estate market overheated; and this process was de facto supported by the expand of external financing. However, this growth proved to be unsustainable, largely due to low labour productivity and insufficient effectiveness of investment projects undertaken by major non-financial organisations that attracted foreign financing. As a result, the limitation of foreign financing led to a decline in financial indicators and facilitated the emergence of losses in the real sector.

To support domestic currencies and curb inflation, monetary policy in Asian economies was tightened during the 1997–1998 crisis. Nonetheless, its rigidity could be considered insufficient (Corsetti et al., 1998), as cross-border capital outflows were linked to a substantial re-evaluation of risks by foreign investors, which made the increase in key rates to attract foreign capital ineffective.

Chart 19. Exchange rate dynamics (July 1997 = 100%)



Source: Bloomberg.

1.2. Monetary policy 'trilemma' and 'dilemma'

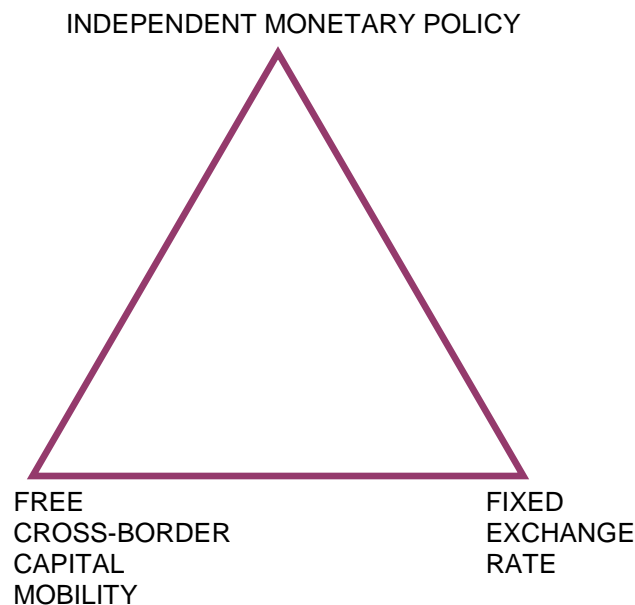
When implementing monetary policy, a small economy has to choose two out of three control parameters (Fleming, 1962):

- independent monetary policy;
- free capital mobility;
- fixed exchange rate.

The monetary policy 'trilemma' postulates that, while maintaining free capital mobility, for an independent monetary policy the national exchange rate needs to float (Mundell, 1963).

Global financial flows for emerging market economies may lead to the transformation of the problem mentioned. As a result, regulators may deal with not a 'trilemma' but a 'dilemma' of monetary policy, where independent monetary policies in the framework of the 'dilemma' are only possible if the cross-border capital flows are managed (Rey, 2015). The emergence of the monetary policy 'dilemma' is explained by external financial conditions influencing internal conditions, including lending dynamics and debt burden, as well as asset prices so significantly that a floating exchange rate becomes an insufficient stabiliser. Therefore, such influence necessitates smoothing out imbalances via monetary policy.

Chart 20. The monetary policy trilemma



Monetary policy in the concept of 'dilemma' is viewed as a tool for smoothing out imbalances caused by external financial indicator dynamics, essentially implying the use of monetary policy to ensure financial stability. In contrast to this concept, the Mundell-Fleming 'trilemma' assumes a possibility to smooth out fluctuations in the real cycle and inflation with an independent monetary policy, but it is not assigned to ensure financial stability at that.

The monetary policy 'dilemma' concept involves managing foreign capital flows either through direct control or via macroprudential policy. This takes into account the limited effectiveness of such governance: capital flow management measures have low efficiency in the global digital market, and macroprudential measures aim to increase financial institutions' resilience but are insufficient to smooth out external financial performance.

1.3. Restrictions on cross-border capital flows

With active control of external operations, monetary policy can potentially achieve price stability more effectively, as shocks generated in the external sector will be additionally smoothed out. Controlling cross-border capital flows in theory eliminates the 'dilemma' problem, creating a situation where external risks to financial stability can be disregarded at monetary policy decision-making.

Applying restrictions on cross-border capital flows is possible with an effective banking prudential policy in place, while a lack of effective banking supervision may lead to additional risk build-up in the banking sector due to banks circumventing restrictive measures (International Monetary Fund, 2000). Imperfections in registration and statistical recording of transactions, including foreign direct investment and cross-border credit, may cause the regulator to overestimate the effectiveness of implemented international capital flow management measures (Bank of International Settlements, 2017). Therefore, implementing capital flow management measures should be consistent and comprehensive, eliminating the possibility of segments remaining exposed to external risk, such as offshore currency and foreign exchange markets. Unless this rule is followed, external markets such as offshore foreign exchange markets, when subject to limited regulatory restrictions, can provide increased returns due to arbitrage opportunities, creating strong incentives to circumvent barriers.

In practice, today, central banks and other financial regulators either do not employ measures to control cross-border capital flows or apply them sporadically and in limited scope. This occurs because such measures threaten the stability of the balance of payments, specifically the ability to attract foreign capital after the outflow period has ended. For instance, imposing restrictions on capital outflow may eventually result in investors completely avoiding investments in its economy. Furthermore, as technology advances in practice, capital flow management measures can be circumvented with great efficiency. Introduction of capital controls to maintain financial stability can be an exception, which experienced the Bank of Russia in 2022²⁷.

1.4. Monetary policy within the Integrated Policy Framework

In 2020, the International Monetary Fund introduced the Integrated Policy Framework (IPF), a new analytical concept of integrated macro policy. The IPF involves utilising a broad mix of tools to respond to the negative effects of external factors taking greater account of global shifts in the world economy. The IPF is based on a set of economic assumptions (Basu et al., 2020):

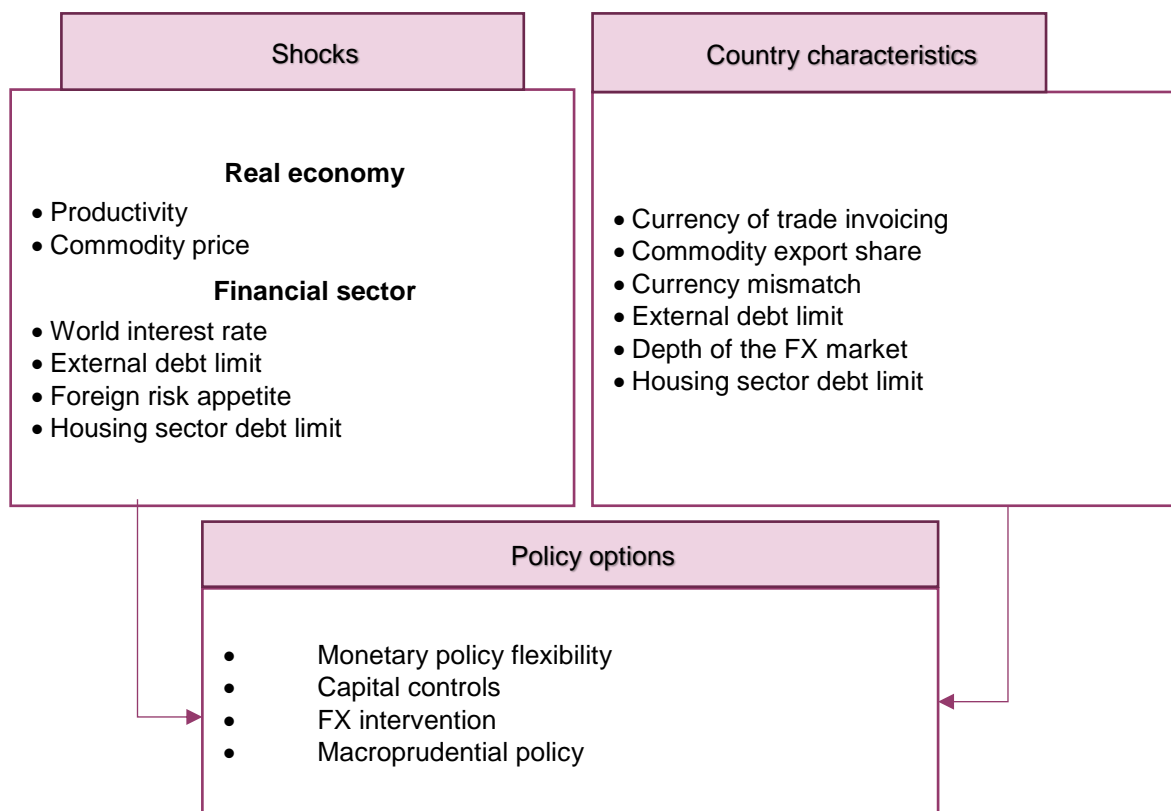
- Financial market development has not gained perfection. Emerging markets are exposed to heightened volatility in cross-border capital flows, and thus a stronger impact on their financial and real sectors.
- External trade contracts are predominantly nominated in US dollars, which may limit the benefits of a floating exchange rate — a phenomenon known as 'dominant currency pricing'.
- Borrowing from international capital markets increases the currency mismatch between the assets and liabilities of entities in global economies.

Based on this, the IPF's authors suggest an extended toolkit compared to Mundell-Fleming framework.

The IPF employs a more systematic analytic approach, which assists in identifying conditions for the utilisation and coordination of monetary policy measures, macroprudential measures, currency interventions, and capital flow restrictions for effectively achieving macroeconomic and financial stability objectives (Boz et al., 2020). Pursuing the IPF implies that it will enhance communication and may increase the trust of economic agents in the regulator's policy (Adrian et al., 2020).

²⁷ For more details see the subsection Geopolitical crisis of 2022.

Chart 21. IPF model



The IPF recommendations can be summarised as follows:

- IPF does not propose one-size-fits-all solutions; a model of optimal policy depends on the specific characteristics of an economy and the nature of shocks it faces. A combination of policy options for an economy with an imperfect financial market and large external currency-denominated debt will differ from that for an economy with a deep, liquid financial market or a small volume of currency-denominated external debt.
- IPF is not employed to justify support for a target exchange rate of the domestic currency.
- An economy with a floating exchange rate, deep currency markets, and uninterrupted access to capital markets can most effectively adapt to external shocks through automatic stabilisation via flexible exchange rate adjustments.
- Vulnerabilities such as a shallow financial market, high dollarisation, poorly anchored inflation expectations, and others may limit the efficiency of economic adjustment through a floating exchange rate, necessitating the use of a range of instruments with a specific hierarchy depending on economic conditions specific for the country and the shocks it faces.
- The negative impact of volatility in financial markets due to significant mismatches in maturity and/or currency structure of assets and liabilities in systemically important organisations' balance sheets can be mitigated through capital controls, foreign exchange interventions, and macroprudential policies. The use of these instruments can enhance the monetary policy efficiency, ultimately allowing for the achievement of price and financial stability with reduced volatility in gross output. The build-up of capital and liquidity reserves during growth periods also contributes to a smoother transition through crisis periods.
- Preventive measures to restrict capital inflows can be used against the 'sudden stop' phenomenon, which will help reduce risks to financial stability. Measures to limit cross-border capital flow can offset the effects of inactive macroprudential regulation.

- The stabilisation benefits of the IPF should be weighed against the potential losses from slower financial market development, communication challenges when explaining decision-making motives, and other negative side effects.

Theoretically, regular application of the mentioned instruments should lead to the development and long-term stability of financial market segments and institutions in the economy, which were initially targeted for correction. Additionally, the combination of various macroeconomic policy instruments helps enhance efficiency in achieving price and financial stability objectives.

In practice, the IPF offers a mix of inflation targeting and additional stabilisation macro policy tools, which are currently utilised in modern global economies.

It is important to note that reducing the economy's vulnerability to external risks can also be achieved through fundamental improvements in macro indicators, by implementing fiscal policy measures or other administrative decisions. After 2009, emerging market economies experienced a material decrease in public debt vulnerability to capital outflows, due to increased foreign currency reserves, enhanced domestic currency exchange rate flexibility, and reduced external borrowing volumes. Adapted mechanisms for accumulating and spending sovereign funds can be used to smooth out the impact of cross-border capital flow volatility without aiming to control exchange rates or international investor expectations.

2. Monetary policy and internal financial stability risks

Monetary policy has the potential to limit not only external but also internal systemic risks, i.e. risks that originate within the national financial system.

Using monetary policy for this purpose should not conflict with achieving inflation target. Thus, the issue of selecting the optimal strategy for conducting monetary policy arises, considering the following circumstances:

- Is the policy implemented in the context of emergence of internal systemic risks?
- Can there be reciprocal interaction between monetary policy and prudential regulation?

Based on the answers to these questions, 3 monetary policy regimes are identified with/without consideration of financial stability in decision-making:

- Monetary policy is not employed to mitigate financial stability risks.
- Monetary policy takes financial stability risks into account on a discretionary basis.
- Monetary policy considers financial stability risks on a continuous basis.

Generally, the emergence of internal systemic risks can be linked to decision-making by domestic financial institutions. The distinction between internal and external systemic risks may not be entirely clear. For instance, the increase in banks' foreign currency liabilities could be an internal risk, while the inflow of foreign capital providing foreign currency funding would correspond to external risks.

2.1. No consideration of financial stability: Jackson Hole Consensus

Monetary policy does not take risks to financial stability into account, along with limiting the accumulation of systemic risks and maintaining financial stability when systemic risks materialise — these are the objectives of macroprudential policy. Monetary policy is aimed at managing liquidity in the banking sector and adjusting monetary conditions to achieve target indicators for economic activity or inflation.

The monetary policy approach disregarding risks to financial stability was formulated as a consensus among central bank participants at the Jackson Hole Economic Symposium — the Jackson Hole Consensus or 'Clean Up The Mess' approach (Stevenson, 2002), stemming from the Federal Reserve policy, largely associated with Alan Greenspan, former Federal Reserve chairman, including the times of the dotcom bubble.

This is the conventional monetary policy, where its measures are not utilised to ensure financial stability. At the stage of systemic risk accumulation, monetary policy focuses on the primary inflation target or economic activity, and when crisis phenomena occur, it transitions into the anti-crisis clean phase. Implementing the clean phase involves lowering of interest rates to support lending and aggregate demand. Supporting the functioning of financial markets can be achieved by providing additional banking liquidity.

Jackson Hole Consensus (JHC) assumes that the central bank's real capacity to influence inflated expectations and excessive price growth in financial markets is limited. Hence, it is challenging to identify a bubble in markets, even when the dynamics of relative asset prices in the economy is closely monitored. Moreover, the central bank does not always possess more information than markets (Mishkin, 2007). If the central bank identifies a bubble, it is highly probable that market participants have already recognised it and it will 'burst' soon. Therefore, the bubbles identified by the central bank are likely to have reached their maximum size, and the 'overheating' of the market segment is improbable in the long term (Mishkin, 2011).

Raise in interest rates to counteract bubbles has a mixed effect, as market participants may anticipate significantly higher returns from investments in relevant market segments, so a few percentage-point change in interest rates is unlikely to materially alter prevailing market trends. Furthermore, financial stability can be maintained by ensuring the banking sector's resilience with macroprudential measures even under ultra-soft monetary conditions, rather than by influencing the formation of bubbles through monetary policy.

An argument for using monetary policy for financial stability is that, being aware of the central bank adherence to such a regime, the financial sector may take on increased risks with growing financial indicators, assuming that monetary authorities will later help cope with the crisis impact, including through significant easing of monetary conditions (Keister, 2010). Thus, there is a risk of dishonest behaviour in the financial sector, manifested in the increased appetite for risk-taking of financial institutions, including by disregarding the direction of monetary policy, interest rate levels, and the dynamics of financial indicators.

After the financial crisis, central banks employed elements of the 'Clean Up The Mess' approach to restore market operations when certain aspects of the monetary policy transmission mechanism might have been limited in functionality. The European Central Bank viewed the measures taken after the acute phase of the 2007–2008 global financial crisis (low rates, long-term financing for banks, and asset purchases) as supporting the transmission of monetary policy (European Central Bank, 2010).

2.2. Discretionary consideration: Leaning Against the Wind

In this regime, monetary policy is to aim also at financial stability on a discretionary basis, either when the accumulation of systemic risks becomes apparent or when systemic risks have already materialised.

Leaning Against the Wind (LAW) approach to monetary policy has been long considered the primary alternative framework to the conventional approach. This approach assumes that monetary policy is conducted in a standard mode during the period of systemic risks build-up, remaining focused on price stability. When it becomes evident that risks in the financial sector are systemic, monetary policy shifts to a lean regime, involving higher interest rates and other measures aimed at tightening monetary conditions to contain and potentially liquidate any financial market bubbles. Leaning against the wind (LAW) approach, that is, tighter monetary policy for financial-stability purposes, may be used, even admitting deviation from the inflation or economic activity targets. LAW may also include extending the time horizon for achieving the inflation target, reflecting the consequences of combating market overheating (King, 2004).

Employing monetary policy to limit systemic risks may be appropriate when substituting for macroprudential instruments that not available to the the regulator or that may be assessed ineffective (Svensson, 2016). LAW may be effective if there are economic imbalances that are not sensitive to macroprudential policy interventions, such as overvalued asset prices in specific market segments. Prudential policy does not affect

asset pricing directly, for instance, the value of real estate or securities quotes. Additionally, it states that macroprudential measures have a relatively brief history of usage in combating systemic risks, and their implementation is accompanied by uncertainty regarding their impact on bank balance sheets. According to the stated considerations, when bubbles buildup simultaneously in various financial market segments, monetary policy comes effective tool to deflate them (Jellen, 2014).

Use of monetary policy for an 'overheated' financial sector and specific real sector segments of the economy within LAW framework carries the risk of excessive tightening. To stabilise financial indicators, monetary policy tightening may demand a significant key rate increase, which would inherently produce negative effects on the real sector. Moreover, tightening monetary policy could result in the rapid liquidation of the bubble, instantly transitioning the financial sector situation into an acute crisis phase. This will restrict the ability of entities in both financial and real sectors to hedge their risks and prepare at large for a crisis situation strategically and operationally. Due to the implementation of LAW, the economy may incur additional losses.

In sum, the main criticism of LAW pertains to the central bank's capacity to effectively address bubbles in financial markets. Macroprudential policy possesses an essential attribute unattainable by monetary policy, as it corrects market failures in risk assessments and complements microprudential regulatory frameworks. The financial sector can operate by merely adhering to the central bank's basic regulatory requirements; however, due to the specific interactions between entities and insufficient risk assessments, particularly during economic booms, risks to financial stability may still emerge and accumulate, subsequently impacting the real sector negatively.

In this case, monetary policy can potentially help limit the growth of bubbles in the financial sector, but it does not increase the financial system resilience at large. As a result, if monetary policy measures were insufficient to maintain financial stability, the banking sector becomes too vulnerable to the potential subsequent materialisation of systemic risks. Furthermore, tightening monetary policy to limit systemic risks may have a depressing effect on both the real sector of the economy and those segments of the financial market without pronounced imbalances (Bean, 2016).

2.3. Systematic approach: Financial Stability Oriented Monetary Policy

A monetary policy with a reaction function that includes financial stability takes into account financial indicators similarly to inflation and economic activity, i.e. continuously at each decision being made. Financial Stability-Oriented Monetary Policy (Borio, 2016), Integrated Inflation Targeting (Agenor & da Silva, 2019) represent new considerations in monetary policy implementation that have not yet been tested by regulators in global economies. Under FSOMP, monetary policy additionally targets financial indicators such as the debt burden of the real sector and equity prices, while monetary policy within IIT framework considers the dynamics of credit aggregates as a risk to financial stability.

The monetary policy regime that continuously considers financial stability is based on the hypothesis that applying a combined objective is more effective than separating price-stability and financial-stability objectives. The hypothesis has been confirmed only by the model simulations so far. Moreover, even in practice, it may take long to see results from the new monetary policy regime, as crisis episodes on average occur about every 10–15 years.

Arguments for using FSOMP or IIT policy include the fact that maintaining financial stability is a more important task for regulators, as price stability and the effective functioning of the real sector in a modern economy are impossible without a smoothly operating financial system. Macroprudential policy instruments alone are insufficient to address systemic risks, primarily for smoothing out overheating in financial markets, so systematic consideration of financial indicators is necessary when making interest rate decisions. The outcomes of banking crises is far more devastating than recessions caused by production or trade issues. Hence, the authors of FSOMP and IIT suggest that central banks should strive to prevent them at any cost, utilising all available tools for this purpose.

The implementation of FSOMP or IIT policy does not address the coordination of monetary policy and prudential regulation of banks. Going back to the review of the existence and limitation of systemic risks²⁸, hypothetically, near-unconditional perpetual financial stability could be achieved if risk-creating claims are reserved with a substantial margin in the financial sector²⁹. Moreover, it is unclear from the suggested implementations to what extent macroprudential policy is employed.

²⁸ For more details, see the section Financial stability.

²⁹ It is very likely, that this may result in distortions. However, it is also important to note that prolonged excessive tightening of monetary policy to curb systemic risks could lead to distortions in the financial sector or among households and firms.

APPENDIX 2

The world practice

Case studies from world central banks' practices demonstrate how monetary policy decisions can be made regarding financial stability risks, as well as the diversity of interconnections and outcomes. Additionally, case studies from the world practice are supported by references to in-depth analytical materials.

Federal Reserve and the 'Clean Up The Mess' case study

A long period of low rates in the US economy resulted in the accumulation of large volumes of low-yield bonds on financial institutions' balance sheets, particularly government and corporate bonds. To fight inflation, the Federal Reserve (the Fed) has turned to the interest rate hike cycle, the effective federal funds rate has risen by 4.5 percentage points in just over a year.

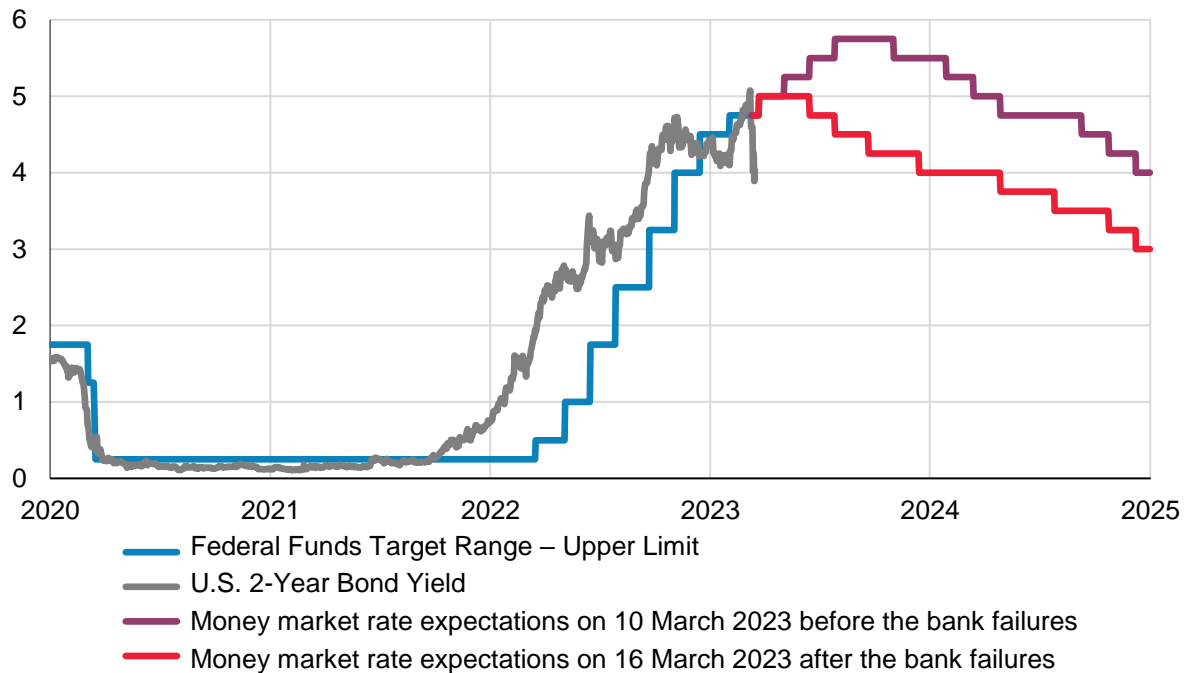
The increase in rates led to a revaluation of fixed-income assets in the economy and led to materialisation of interest rate risk for those banks and other financial institutions that have not hedged against it in time. In addition, declining risk appetite increased the sensitivity of the financial instruments market to asset sale.

A similar situation — risk aversion of investors plus tighter monetary policy — has echoed with the collapse of Silicon Valley Bank, a top-20 bank with over \$200 billion in assets in the US financial sector. The bank came under stress when deposit outflow began. To repay them to creditors, the bank was forced to urgently sell a package of bonds at a loss. Information about financial problems in the bank spread among its clients, mainly tech startup investors, which triggered a simultaneous withdrawal of large amounts of deposits, most of which were uninsured. As a result, the bank collapsed, and its activities were halted by the regulator on 10 March 2023. Within just a few days, similar problems affected Signature Bank, a bank with assets of more than \$100 billion.

Within the following few days, **US fiscal and monetary institutions announced extraordinary measures to support the financial system** (Board of Governors of the Federal Reserve System, 2023) against the risks of bank contagion and limiting negative depositor expectations:

- The Federal Deposit Insurance Corporation announced the launch of a program to fully protect all depositors who had funds in the failed banks.
- The Federal Reserve announced liquidity support for the compensation mechanism through urgent interest rate transactions and the expansion of lending to banks through the discount window.
- The Department of the Treasury announced the provision of guarantees for liquidity support operations within the discount window.

Such coordination of economic policy measures at the time of writing the analytical note allowed for maintaining financial stability without adjusting the rigidity of monetary policy. Therefore, the Fed's actions in this case can serve as an example of implementing the principle of separate goal setting between instruments for ensuring price stability and providing anti-crisis liquidity to the financial sector. The results of the policy can be evaluated at a later date. Market expectations of a lower rate path, which immediately appeared after the announcement of the bank support package, may also be related to a decline in government bond yields due to increased demand for safe assets, that is, regardless of the Fed's foreseeable actions.

Chart 22. Rates and market expectations in the United States (% p. a.)

Source: *Investing.com*.

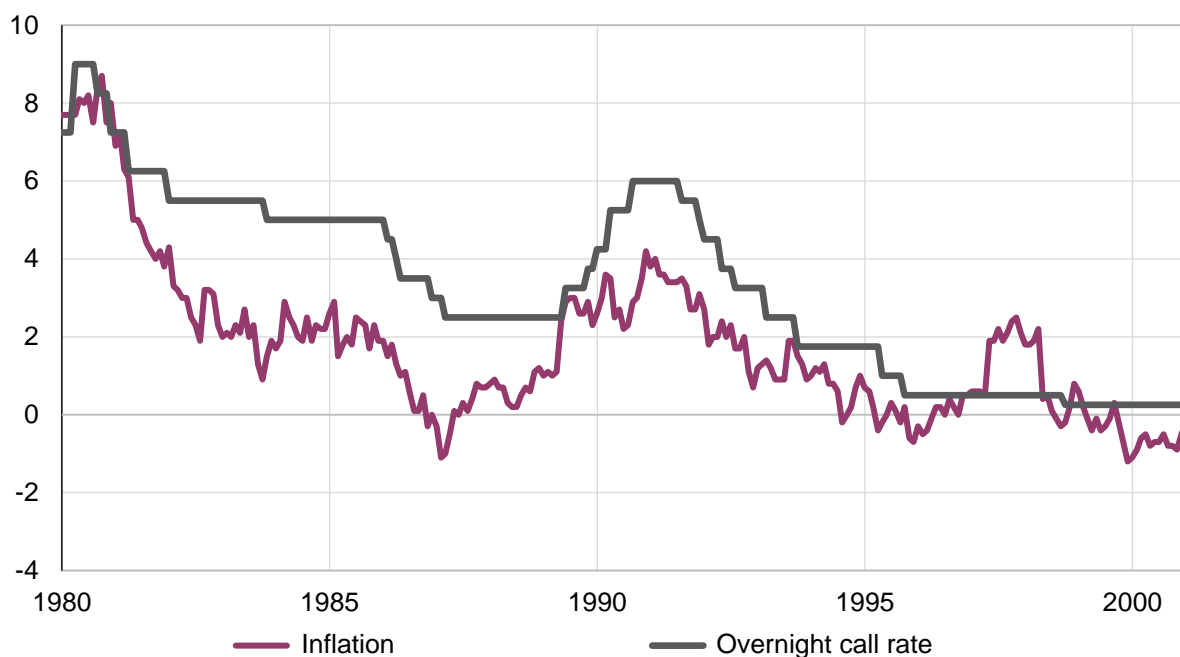
Bank of Japan's unplanned implementation of Leaning Against the Wind

There are a few examples of pursuing monetary policy to 'lean against the wind' (LAW) by global central banks. **One of the first experiences to constrain systemic risks through monetary policy was the Bank of Japan (BoJ)** tightening of monetary policy in the late 1980s and early 1990s. Originally, this tightening was not aimed directly at ensuring financial stability, but its implementation led to the burst of the real estate market bubble.

The bubble in this market formed during a long period of low interest rates (Jinushi et al., 2000). To curb accelerating inflation, the BoJ decided to raise the policy interest rate by 4 percentage points. As a result, the decision unintentionally triggered then existing real estate bubble to burst. This led to a financial crisis.

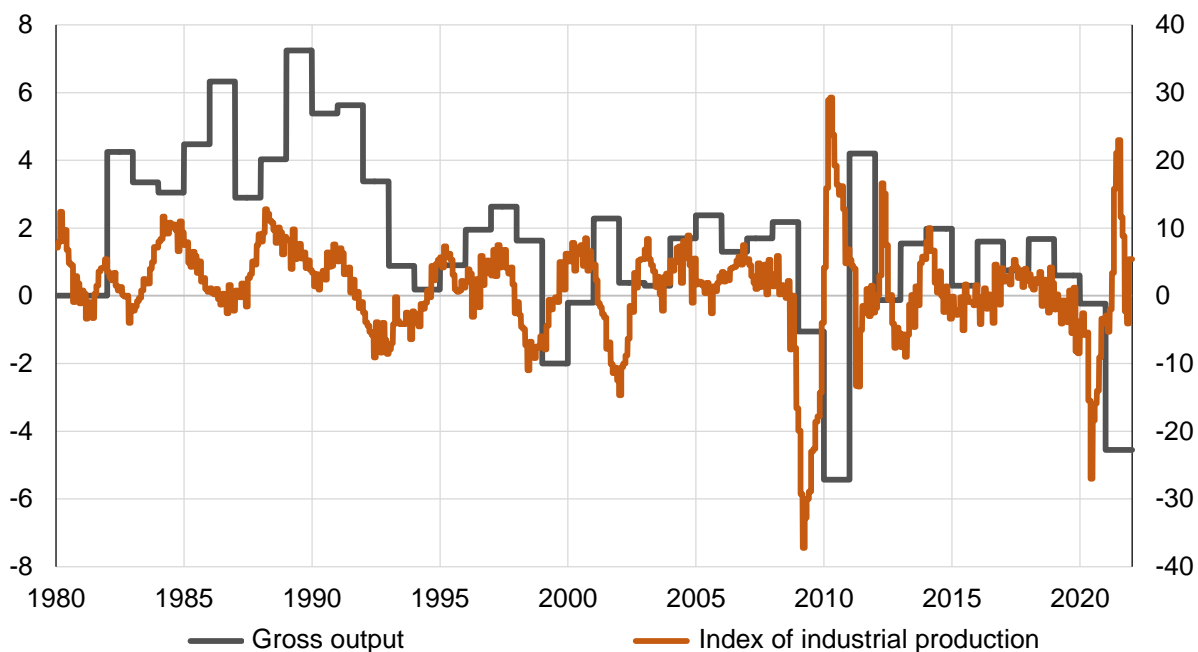
Then the negative reaction spread to the real sector, causing recession in the Japanese economy, and laying the ground for deflation. The negative effects caused by this episode had a long-lasting impact on Japan's economy.

Chart 23. Japan annual monetary policy rate (% p.a.) and inflation (% YoY)



Source: Bloomberg.

Chart 24. Japan gross output (% YoY) and index of industrial production (pps on the right axis)



Source: Bloomberg.

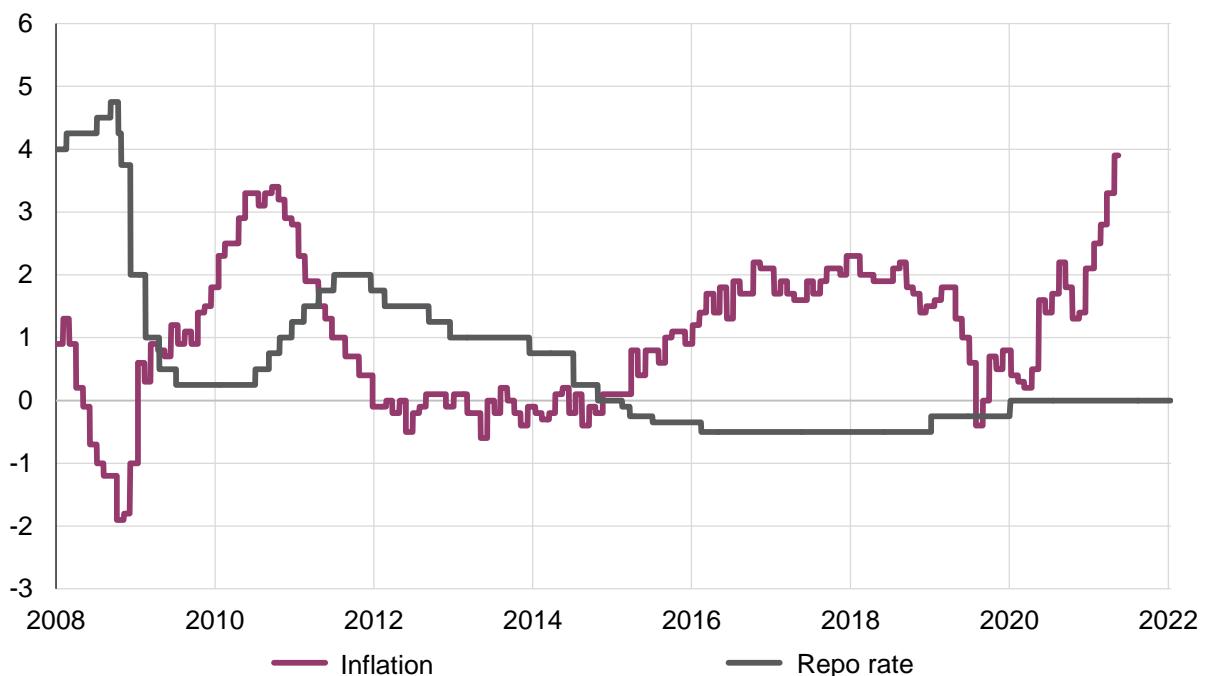
Swedish National Bank and planned implementation of Leaning Against the Wind

The Leaning Against the Wind (LAW) policy was pursued most actively among economies with advanced financial markets by the Swedish National Bank (the Riksbank) in 2010–2012. This experience is crucial for analysing the comparative effectiveness of two monetary policy regimes: conventional inflation targeting and financial stability-oriented monetary policy framework.

In response to the 2007–2008 global financial crisis, the Riksbank lowered the monetary policy interest rate (repo rate) by 2 pps to 0.25% in 2009 and kept it constant until mid-2010. Mortgage lending growth exceeded 10% per year due to low interest rates, and residential real estate prices grew by over 15% per year, which the Riksbank viewed as risks to financial stability.

The policy to limit these risks was executed within the LAW framework by raising the repo rate to 1.75% in the second half of 2011 and maintaining it between 1.25% and 2% during 2012–2013. The Riksbank aimed to curb the growth of lending and households' debt burden. However, the Riksbank's decision to raise the repo rate ran counter its inflation target, as annual inflation in 2010 was 1–1.5% with a target of 2%.

Chart 25. Bank refinancing rate (% p.a.) and inflation (% YoY) in Sweden



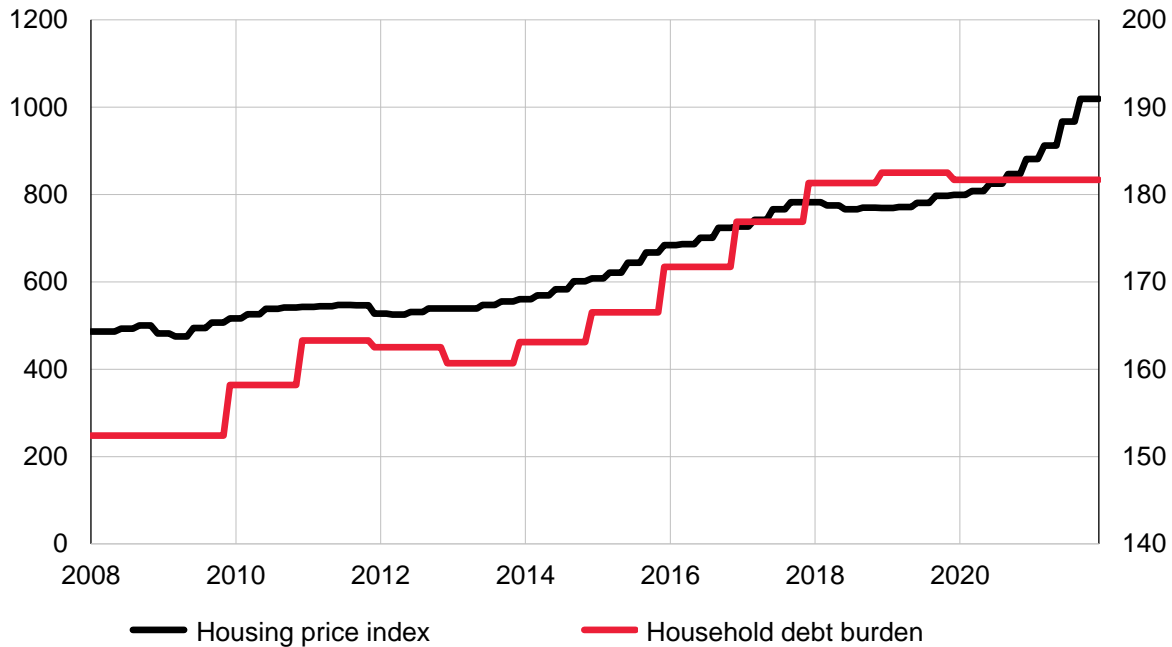
Source: Bloomberg.

Lars E.O. Svensson, a former deputy governor of the Riksbank, criticised the use of LAW in Sweden because of the results of its implementation in 2011–2012. The tightening monetary policy of the Riksbank did not significantly impact the households' debt burden, nor did it result in a slowdown in housing price growth. By 2014, the household debt burden in Sweden remained close to the 2010 level, and housing prices continued to grow along the previous upward trend.

Tight monetary policy from 2010 to 2014 led to a further decline in inflation into the deflationary zone, ending up with a slowdown in economic activity. This, in turn, limited the growth of the household real income. Ultimately, the debt and debt burden of individuals in Sweden, adjusted for inflation, did not decrease despite the rigid monetary policy implemented from 2010 to 2014. This was caused by the uneven influence of interest rate increases on retail lending growth rates and inflation (Svensson, 2013). Application of LAW in the Swedish economy resulted in net losses for the real sector without a decline in financial stability indicators. In 2012, the Riksbank abandoned LAW implementation with its increased monetary policy rigidity

due to deflationary processes in the national economy. However, Svensson's calculations indicate that maintaining low interest rates by the Riksbank from 2010 to 2014 could have reduced the households' debt burden through higher economic activity (Svensson, 2014).

Chart 26. Sweden house price index (points) and household debt (%/income on the right axis)



Source: Riksbank.

Norway experience of partial Leaning Against the Wind

The Norges Bank (NB), Norway's central bank, follows a financial stability-oriented monetary policy. Within its strategy, the key rate can be set above or below the level needed to achieve short-term inflation targets if there are risks of financial imbalances (Norges Bank, 2022). Deviations from macroeconomic indicators aligned with the target inflation path are viewed as necessary costs for reducing financial stability risks. Information on factors considered in monetary policy decisions is regularly published by the Norwegian central bank in the quarterly **Monetary Policy Report with financial stability assessment**.

In 2012, the NB published the monetary policy efficiency criterion as a loss function:

$$L (\pi_t - \pi^*, y^t - y_t^*, i^t - i^{t-1}, i_t - i_t^*)$$

where π_t is the inflation rate; π^* is the target inflation rate; y^t is the gross output growth rate;

y_t^* is the estimated potential growth rate of gross output; i^t and i^{t-1} are the key rate levels;

i_t^* is the estimated neutral level of the key rate in month t .

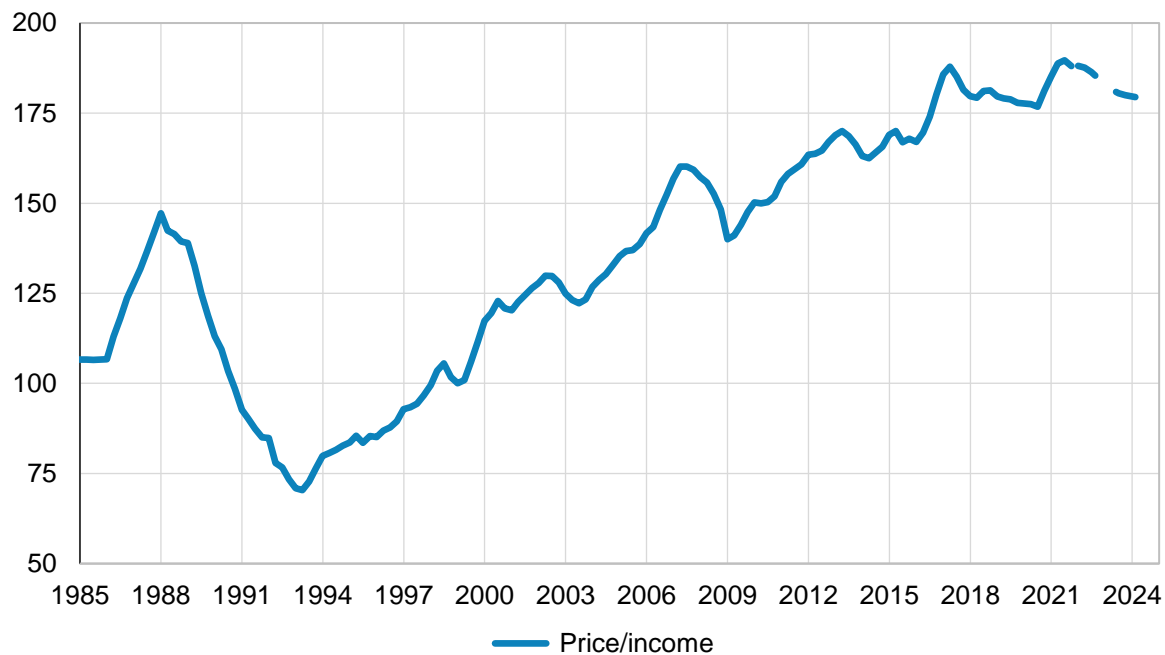
Under the NB approach, the component $i_t - i_t^*$ can account for the financial stability factor in monetary policy decisions: it is assumed that the key rate, depending on its deviation from the neutral value, can influence the formation or limitation of financial imbalances.

During 2012–2014, the Norges Bank tightened monetary policy, citing volatility factors in external financial markets (Norges Bank, 2012). Raising the key rate aimed to maintain the domestic market's attractiveness

to limit the materialisation of external risks. Meanwhile, inflation in the Norwegian economy in 2013–2014 remained close to the target level, and accounting for financial stability was primarily of communication purpose.

From 2021 Q1, the Norges Bank identified growth of real estate prices as a potential factor of increase in the key rate (Norges Bank, 2021). The key rate increase (from 0 to 0.25%) at the beginning of 2021 Q3 was accompanied by commentary on the necessity of maintaining a higher key rate level to limit financial imbalances. It was reported that, in addition to standard macroeconomic factors, financial stability risks will also be considered when returning the key rate to a neutral level.

Chart 27. Norway household affordability index (price/income)



Note: The dotted line indicates the forecast published in 2021.

Source: Norges Bank.

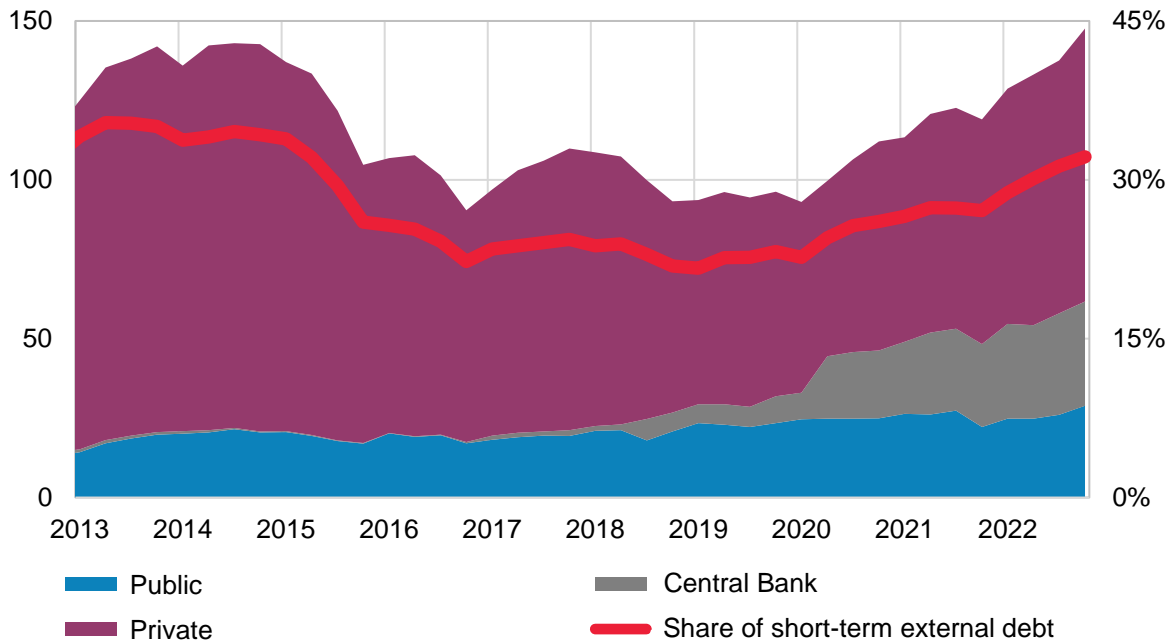
The Norges Bank's approach should not be viewed as a regime with automatic financial-stability provision through monetary policy like FSOMP or IIT frameworks, despite the declared inclusion of a financial stability component in the optimised monetary policy function. The Norges bank's practice of pursuing monetary policy can be characterised as partly LAW approach, with a focus on the communication component, since monetary policy was not used for financial-stability purposes with a material deviation from the initial inflation target. The Norges Bank primarily tightened monetary policy for standard macroeconomic objectives, using the financial stability factor only as an additional argument. Nevertheless, this structure serves as an example of a regulator that analyses financial stability risks and conducts relevant communication when making decisions on monetary policy.

Central Bank of the Republic of Turkey and reverse Leaning Against the Wind

Since 2013, the Central Bank of the Republic of Turkey (CBRT) has faced developments in the economy that could be described as threats to financial stability. The monetary policy response to internal and external changes was unconventional, as the CBRT eased monetary policy despite the accumulation of systemic risks and their subsequent partial materialisation.

In 2013, in Turkish economy appeared a slowdown in inflows to the balance of payments financial account, in terms of both direct and portfolio investments, while the outflow from the balance of payments current account remained at the previous level. This outflow was ultimately offset by the increase in the amount of external debt, accumulated by the budget, banks, and non-financial organisations.

Chart 28. Turkey short-term external debt (\$ billion) and its share in total external debt (%)



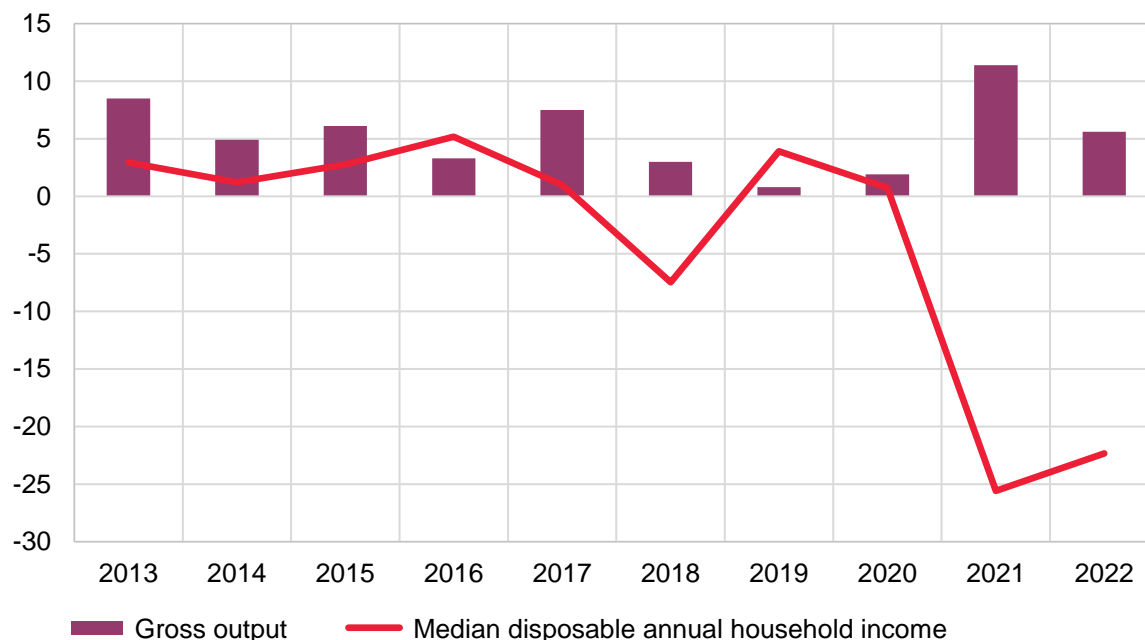
Source: CBRT.

The rise in external debt was largely due to short-term obligations, creating refinancing risks, essentially posing a currency liquidity risk for Turkish economy entities. This risk could not be mitigated without significant adjustments in financial markets and the banking sector. For instance, during a crisis, the central bank can support financial institutions' liquidity in the national currency with minimal impact on monetary conditions. The situation worsened as a credit boom began in the Turkish economy in 2016, affecting construction and real estate markets. Most of corporate debt consisted of currency-nominated loans. As a result, the Turkish economy faced currency risk and liquidity risk in the financial sector, as well as substantial currency risk in the real sector.

The issue of accumulated systemic risks in Turkey's economy became apparent between 2016 and 2018, following a slowdown in capital inflows to emerging markets and domestic financial regulatory easing. Growing economic imbalances led to a gradual depreciation of the lira against external settlement currencies and an acceleration of inflation. Subsequent developments in the Turkish economy can be described as a partial realization of systemic risks, primarily external ones. Although there were no technical disruptions in the financial system, changes in the functioning of the banking system and the financial indicators dynamics affected the real sector, primarily public welfare. The depreciation of the Turkish lira has led to an increased debt burden on foreign exchange obligations, and the related risks may not yet be fully materialised. In the banking sector, this followed an introduction of a FX-protected deposit scheme, protecting part of household FX deposits as lira-denominated savings, provided that they are converted into lira. At the expense of future costs for banks and the budget, this allowed for a temporary reduction in foreign exchange liquidity risk and made the bank statements look better. Rising inflation due to exchange rate revaluation also had a negative impact on the real

household income³⁰ and led to the devaluation of savings. Therefore, the changes that have occurred in the economy can be seen as an accumulation of both external and internal risks to financial stability, with their partial realization.

Chart 29. Turkey gross output and income (% YoY in prices of 2015)

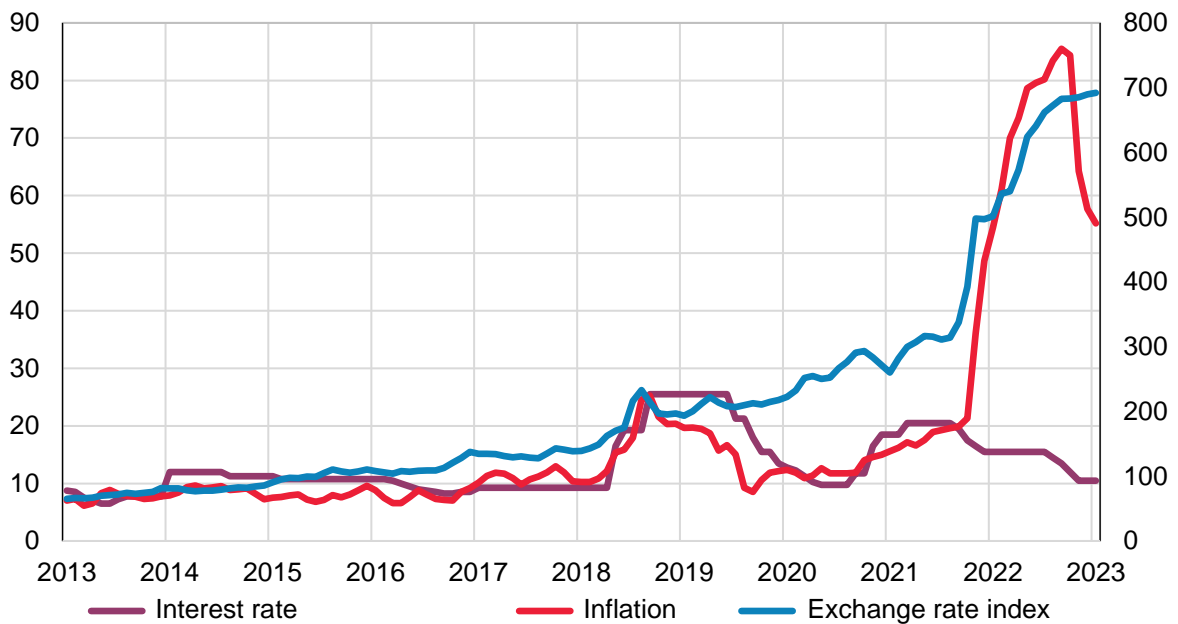


Sources: *International Monetary Fund, TURKSTAT, Reuters.*

The shift to equilibrium in the altered conditions — a less intense cross-border capital inflow and a weaker domestic currency exchange rate — could have occurred at a higher interest rate. For this, the Turkish central bank should have tightened monetary policy to stabilise the situation and solidify market participants' expectations regarding specific inflation indicators and interest rate path. Instead, the CBRT maintained lower interest rates, which was announced to be a response to negative economic developments with the following rationale: a looser monetary policy should stimulate domestic demand and investment, leading to a renewed capital inflow and stabilising inflation and exchange rates near pre-crisis levels. This logic did not work, even though several leaders of the CBRT had been replaced. Today, the Turkish economy has encountered significantly increased prices and a substantial weakening of the domestic currency. The situation deteriorated further in 2021 H2, when the central bank of Turkey's foreign-exchange reserves were depleted, and their replenishment sources were largely exhausted, limiting the bank's ability to influence exchange rate dynamics through interventions in the foreign exchange market.

³⁰ While statistics for 2022 disposable household income are not yet available, unofficial surveys and official inflation data allow for an assessment of the changes in Turkey's real disposable household income.

Chart 30. Turkey interest rate (% p.a.), inflation (% YoY), and exchange rate against the US dollar (2017 = 100%)

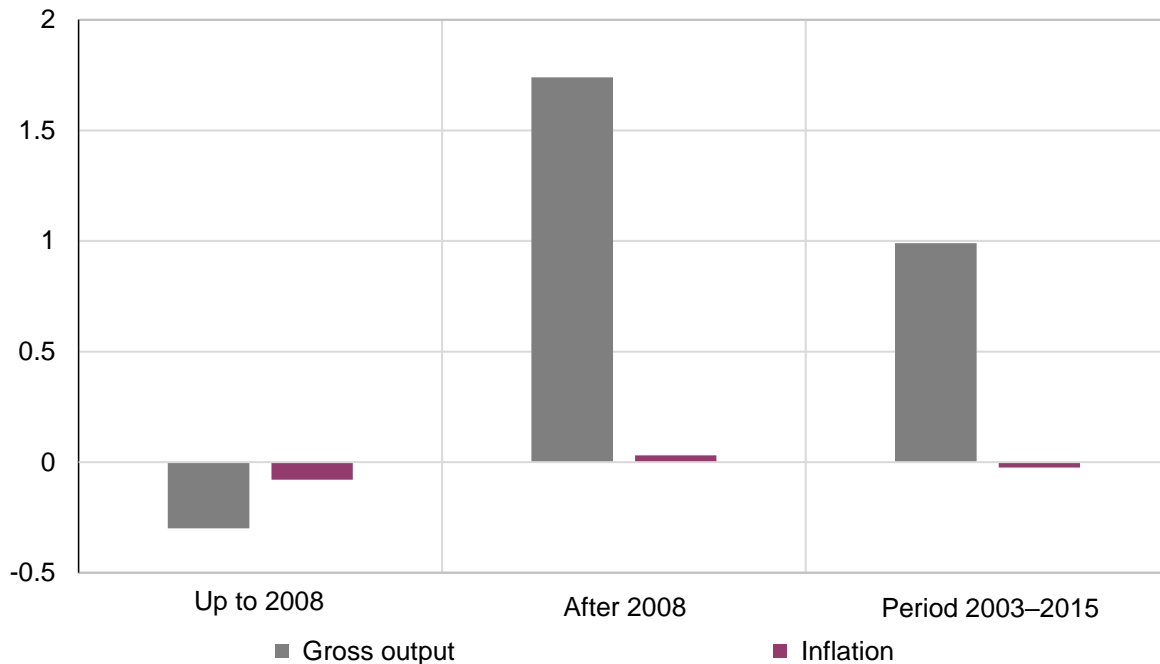


Sources: CBRT, FRED.

A more effective approach in the circumstances faced by the Turkish economy since 2013 would have been tightening monetary policy with mandatory transparent communication of inflation forecast, exchange rate regime, and interest rate path. In these conditions, the period of economic slowdown would be brief and could be followed by a recovery, provided that macrostability is maintained and risks to financial stability do not materialise. This was not done, and the case of CBRT now represents an example of a suboptimal LAW policy, where the monetary policy response contributed both to worsening price stability and accumulation of financial-stability risks with their partial materialisation.

United States and Financial Stability-Oriented Monetary Policy simulation

The FSOMP model was tested for the real and financial sectors on the US data of 2003–2015 (Borio, 2016). The FSOMP model analysis indicates that for the United States, smoothing out financial indicators in 2000–2008 required maintaining a higher real monetary policy rate, which could have resulted in an increase of 12% in gross output over the entire period with virtually unchanged inflation.

Chart 31. Annual deviation of output (%) and inflation (percentage points) for the United States

Source: Borio (2016).

The author's work estimates are based on a model that accurately describes the dynamics of macroindicators and financial indicators in the United States. The 2007–2008 crisis in the United States banking sector was indeed largely caused by ultra-soft monetary conditions, and adjusting monetary policy towards tightening to prevent mortgage overheating could have potentially been effective.

Nevertheless, it is important to note several additional observations when analysing the systematic approach of financial stability-oriented monetary policy. Thus, the mortgage boom in the United States during the 2000s was driven not only by low interest rates but also by regulatory easing for investment banks, while the spillover of the financial crisis into the real sector resulted from ineffective prudential policy. In this case, adjusting the path of the United States financial market indicators through monetary policy might not have been materialised, as the 'overheating' also affected the stock market, which is less sensitive to interest rate increases. Next, tightening monetary conditions in the 2000s, according to model estimates, could led to a 2-year stagnation in the US economy, potentially causing long-lasting negative distortions in investment and consumer behaviour. The situation could have worsened if financial performance was smoothed out of line with model estimates, i.e. systemic risks limits would have got out of control. The possible change in inflation expectations due to the implementation of a less transparent monetary policy regime is not taken into account.

Optimal coordination of measures to curb financial 'overheating' and support economic activity can be achieved using monetary policy, prudential regulation, and fiscal stimulus. Increased interest rates could have been offset by government spending, without causing distortions in specific segments of the financial market that occur with ultra-soft monetary policy. The main issue in this scheme is the timely adjustment of fiscal policy, which might be constrained in its expansion, for instance, due to the accumulated burden of public debt. Moreover, direct coordination of economic policy measures can be challenging, as monetary and fiscal institutions in modern economies are typically independent of each other.

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