

Banking System Vulnerability under High Interest Rates: Balance Sheet Adjustments of Russian Banks during the Russia-Ukraine Conflict

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Abstract. Since the escalation of sanctions against Russia in early 2022, its financial system has faced severe impacts. This study investigates the vulnerability of the Russian banking system under the dual pressure of sustained high interest rates and geopolitical sanctions. It analyzes balance sheets adjustment, focusing on the deterioration of asset quality, changes in liability structure, and challenges faced by capital adequacy ratios. The case study finds that the banking industry experienced significant prosperity from 2023 to 2024, but with large divergence among banks. From 2025 onwards, the lag effect of high interest rates have gradually emerged, substantially increasing non-performing loans. Russian banks still face systemic risk tests. Banks delay loss recognition through large-scale loan restructuring while facing higher funding costs and tighter capital constraints. The Bank of Russia tightens macro-prudential standards while extending regulatory forbearance measures to control systemic risks. Against the backdrop of a deteriorating macroeconomic environment, the banking system remains highly vulnerable, with a persistent risk of a systemic crisis.

Keywords: High interest rates, balance sheet adjustment, Russian banking system, banking system vulnerability

1. Introduction

Since the escalation of Western financial sanctions against Russia in early 2022, including the exclusion of selected Russian banks from SWIFT and the addition of multiple Russian banks to the US Specially Designated Nationals (SDN) List. These measures have disrupted cross-border payments and put enormous pressure on the Russian financial system. As a response measure, the Russian central bank has implemented a series of emergency policies, such as the Russian Financial Information System (SPFS), which has helped stabilize Russia's financial system and restore economic growth, but the vulnerabilities are becoming increasingly apparent.

This study explores the changes in the Russian banking system from 2022 to 2025 based on data from the Central Bank of Russia, bank financial reports, and policy documents. The study reveals the strategy of Russian banks adjusting their balance sheets and the underlying vulnerabilities in the context of sanctions and high interest rates.

2. Institutional background

2.1. Financial sanctions

In March 2022, the European Union announced that seven major Russian banks, including VTB Bank and Otkritie Bank, would be excluded from the SWIFT system. In addition, the US government added multiple Russian banks to the SDN List. The SDN List freezes the assets of designated entities or individuals within U.S. jurisdiction and prohibits U.S. persons from engaging in transactions with them.

2.2. Macroeconomic shocks

The sanctions triggered immediate macroeconomic instability. In March 2022, the ruble depreciated by more than 25% against the US dollar, the central bank raised interest rates by a significant amount, and capital controls were introduced [1, 2]. In response, the Bank of Russia sharply raised its key interest rate (peaking at 20% in March 2022) and introduced capital controls, including mandatory foreign currency conversion for exporters. These sanctions led to a sharp decline in Russia's foreign exchange reserves in September 2022, along with a significant depreciation of the ruble (as illustrated in Figure 1).



Figure 1. Ruble to US dollar exchange rate [2]

2.3. Policy response

Faced with financial sanctions, Russia has adopted various strategies to mitigate its impact, including conducting bilateral transactions in the currencies of partner countries [3, 4]. The Central Bank of Russia launched the Russian Financial Information System (SPFS) at the end of 2014 and has since actively engaged with multiple countries. Domestically, Russia promotes the application of this system through legislation and cost-reduction measures; Internationally, it is also vigorously promoting its application in China, Türkiye, Iran, and other countries.

In addition, Russia has increased the use of the renminbi in trade and reserves and established links with the Cross-Border Interbank Payment System (CIPS). At the same time, strict capital controls were implemented, forcing companies to settle foreign exchange and limiting capital

outflows to prevent the ruble's collapse. The benchmark interest rate has been raised from 9.7% to 21.27% to curb inflation and stabilize public confidence.

3. Data and methodology

This study combines descriptive statistical analysis with institutional assessment. Primary data are drawn from official statistics and reports of the Central Bank of Russia, annual financial disclosures of Russian banks, and analytical publications from the Center for Macroeconomic Analysis and Short-Term Forecasting (CMAKP). Additional secondary data are drawn from academic literature, policy documents, and financial market databases, as relevant.

4. High-interest-rate environment

Table 1. Russia's GDP growth rate, annual inflation rate, and interbank rate (year-end), 2021-2024 [4]

Indicatorbasic	2021	2022	2023	2024
GDP growth rate	5.9%	-1.4%	4.1%	4.3%
Annual inflation rate	6.7%	13.7%	5.9%	8.4%
Interbank Rate(year-end)	8.5%	7.5%	16%	21%

From Table 1, it can be seen that since 2023, the Russian central bank has been continuously raising interest rates, which have remained at historical highs. Although banks' short-term profits have increased, the borrower's ability to repay debts has decreased. This high-interest-rate environment has led to a sharp expansion of the net interest margin. Despite Russian banks generating record profits in 2023-2024, borrowing costs for households and businesses have reached unsustainable levels. This contradictory situation laid the groundwork for subsequent credit deterioration.

5. Balance sheet adjustments

5.1. Asset side

5.1.1. Credit expansion and quality deterioration

Empirical research has shown that low interest rates can encourage banks to relax their underwriting standards and increase credit risk for a certain period of time [5]. Specifically, lower interest rates encourage lending to higher-risk borrowers with lower collateral requirements, and the resulting defaults only occur 1-2 years later. Bouis et al. further demonstrate that borrower-based measures such as DTI caps can mitigate these risks by limiting excessive household expansion [6].

After the Russian central bank cut its key rate to 7.5% in September 2022, a low-rate window opened, and subsidized mortgages and proactive consumer borrowing drove rapid credit expansion [7]. Corporate lending grew at roughly 20% annually, reaching 87.8 trillion rubles by the end of 2024 [8]. Reflecting the risk-taking channel, underwriting standards deteriorated sharply: in the second half of 2023, 45% of new mortgages had a debt-to-income ratio above 80%. Macroprudential tightening subsequently reduced this share to 13% by Q4 2024, confirming that borrower-based

measures can be effective stabilizers [7]. Nevertheless, legacy portfolios from earlier vintages continue to generate losses as accumulated risks mature.

5.1.2. Accumulation of non-performing loans

Monetary tightening increases borrowers' debt burden and amplifies credit risk with a lag [9]. This lag became evident by late 2025: as of 1 October 2025, non-performing loans in unsecured consumer lending reached 12.9%, up 5 percentage points year-on-year, driven by the maturing of risky loans issued during the 2023-2024 credit boom when banks aggressively lent to borrowers with weak credit records [10]. The rapid expansion of mortgage and car loans contributed further to rising delinquencies. To absorb potential losses, banks had accumulated a macroprudential buffer of ₮827 billion (6.5% of the consumer portfolio) by October 2025 [7]. The Bank of Russia also extended its recommendation to restructure loans to corporates and individual entrepreneurs by six months, while temporarily easing provisioning requirements for restructured exposures [11].

5.1.3. Loan restructuring as a risk mitigation strategy

In response to the growing number of non-performing loans, the Bank of Russia has carried out extensive loan restructuring. According to the Center for Macroeconomic Analysis and Short-Term Forecasting (CMASF), between 2022 and 2025, banks restructured approximately 2.4 trillion rubles of household loans, accounting for 6.2% of the retail loan portfolio [12]. CMASF explicitly states that this mechanism enables banks to conceal actual default levels and to delay risk revelation within regulatory tolerance.

Although the restructuring initially prevented a sharp increase in the reported non-performing loan ratio, it introduced significant forward-looking risks. Many restructurings involve interest capitalization or term extension, increasing the borrower's total liabilities without reducing potential credit risk. The coverage of restructuring continues to expand: by the end of the third quarter of 2025, approximately one-fifth of small-and medium-sized enterprise loans had been restructured, particularly in export-oriented industries due to weak external demand and price declines. In December 2025, the central bank further extended restructuring recommendations to corporate borrowers with temporary difficulties and temporarily eased provisioning requirements for those with reasonable recovery prospects [11]. However, this accommodative stance raises a fundamental dilemma: the expectation of central bank forbearance can create moral hazard and exacerbate financial instability.

5.2. Balance sheet adjustment: debt side

5.2.1. Deposit dynamics and financing costs

The deposit insurance theory suggests that a guaranteed deposit cap helps prevent bank runs by protecting retail depositors [13]. In Russia, the deposit insurance limit of 1.4 million rubles per depositor was reiterated in July 2025, which will contribute to the overall stability of household deposits [14]. However, as the central bank raises interest rates, depositors turn to short-term bonds for higher returns. For example, the highest deposit interest rate (15.5%) of the Sberbank in September 2025 applies to three-month maturities, reflecting the bank's strategy of encouraging short-term financing [15]. The cost of bank financing has significantly increased. According to

monitoring data from Russian banks, in the second half of 2025, the top ten banks will have the highest deposit interest rates, exceeding 15% [15].

As more and more liabilities are concentrated in shorter maturities, banks face higher extension risks, as any adverse impact could quickly increase refinancing costs or trigger liquidity pressures.

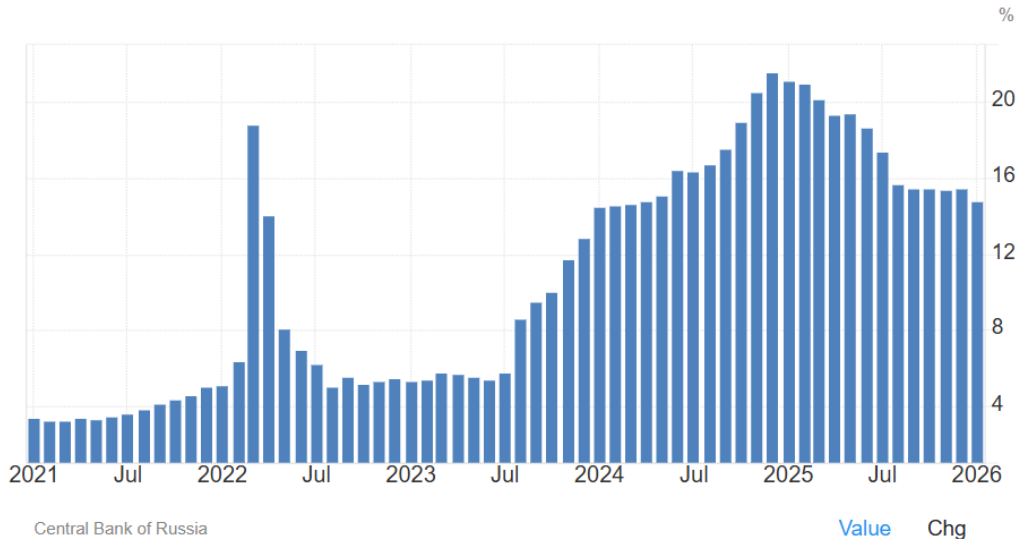


Figure 2. Deposit interest rate in Russia

Banks engage in fierce competition for deposits, with some offering interest rates significantly above the central bank's key interest rate. From 2024 to September 2025, banks offered deposit rates substantially above the central bank's key rate. Although nominal rates later declined to a maximum of 15.5%, effective funding costs continued to rise, prompting a shift toward short-term liabilities (as illustrated in Figure 2) [16].

5.2.2. Capital constraints

Under sanctions, restricted access to external capital forces banks to rely on retained earnings or state support [17]. Despite reports of substantial profits for banks, capital adequacy ratios are facing increasing pressure. In March 2026, Russian Central Bank Governor Nabiullina revealed that by the end of 2025, the overall capital adequacy ratio would be 13.2%, an increase of 0.7 percentage points from the beginning of the year and above the regulatory minimum of 8%. The total capital buffer exceeding the minimum requirement is approximately 9 trillion rubles. However, Nabiullina explicitly acknowledges the differentiation of banks: "Some banks need to make more efforts to catch up with others [16].

5.3. Central bank liquidity support

The central bank provides liquidity to solvent entities, but this support creates a moral hazard: banks with guaranteed access to central bank liquidity may take excessive risks, expecting to be bailed out when trouble arises [18]. Russian banks remained heavily reliant on central bank liquidity tools. Governor Nabiullina disclosed in March 2022 that liquidity support reached a peak of 10 trillion rubles, with a structural liquidity deficit of 7 trillion rubles emerging in early March [17].

However, this dependency creates structural vulnerability. Any tightening of central bank collateral requirements could prevent some banks from obtaining liquidity support, triggering a negative feedback loop [18]. Moreover, as BIS research has shown, the prospect of central bank support is particularly attractive when priced below market rates. tends to crowd out private insurance mechanisms and encourage excessive risk-taking by banks. In Russia's current environment, where differences in collateral quality among banks have intensified, this moral hazard risk remains significant.

6. Regulatory response and policy adjustment

The Bank of Russia adopts a dual-track regulatory approach, seeking to balance financial stability objectives with the operational constraints faced by banks under sanctions.

6.1. Emergency measures

6.1.1. Macro prudential policy

A key tool of macroprudential policy is the implementation of capital buffer requirements, which require systemically important banks to hold more capital than other banks. The capital buffer aims to enhance the resilience of banks to adverse shocks and reduce systemic risks [19]. The Russian central bank is gradually tightening capital requirements for systemically important credit institutions (SICIs) [7]. In May 2025, the Bank of Russia updated its classification method and introduced a five-group system to differentiate capital buffers based on each bank's impact on the economy and financial system. Currently, all SICIs maintain a unified capital buffer of 1%. Russian banks plan to gradually implement the SICI program, increasing its added value to a specified level, allowing each group sufficient time to increase capital [20].

6.1.2. Increase risk weights

Risk-weighted capital requirements require banks to hold capital commensurate with the risk of their assets. The higher risk weight for highly leveraged borrowers reflects their greater default risk, especially during periods of monetary tightening when debt repayment burdens rise. As shown in the financial accelerator framework, highly leveraged companies are more susceptible to shocks because weak equity buffers amplify the decline in returns, thereby increasing default risk. The departmental risk weighting policy targets credit concentration and prevents excessive lending to high-risk departments [21].

Starting on February 1, 2025, the Bank of Russia has introduced risk-weighting surcharges on loans and bonds for high-leverage large corporate borrowers, applicable to increased claims when the following three conditions are met, the risk weight increases by up to 200%: firstly, the total debt of the borrower and its subsidiaries to the bank exceeds ₺50 billion, accounting for 2% of the bank's capital; Secondly, the borrower's consolidated debt to banking capital exceeds 2%; The final interest coverage ratio (EBITDA) is less than 3. Maintain differential risk weighting for retail loans with a debt-to-income ratio exceeding 80%.

6.1.3. Restructuring loan policy adjustment

In 2025, the Bank of Russia adopted a differentiated strategy for restructured loans. For borrowers facing difficulties but with recovery potential, banks were allowed to avoid downgrading loan

quality ratings. In December 2025, the central bank extended the restructuring recommendation by 6 months and temporarily eased loss-provision requirements for eligible borrowers. Banks must regularly verify borrower performance and add provisions if targets are missed [11].

6.2. Relaxation measures

6.2.1. Extend regulatory relief

The support measures introduced in 2022 have been extended until December 31, 2026 [22]. The Russian Central Bank officially confirmed in December 2025 that measures such as exemptions from information disclosure requirements, the easing of loan terms for new entities, and the facilitation of subprime debt financing will remain in effect. Meanwhile, the federal law signed by the Russian President also extends the central bank's special regulatory powers until the end of 2026.

6.2.2. Industry support

The Technology Sovereignty project is a Russian state-driven import substitution strategy targeting sanctioned key industries. Loans issued for "technology sovereignty" projects can apply a 20% risk weight to incentivize loans to priority areas. Specifically, for technology sovereignty projects implemented through franchise mechanisms, if the state bears the lending bank's risk, a 20% preferential risk weight can be applied. For high-quality projects, a lower risk weight of 65% can also be applied [7].

6.2.3. Regulatory tolerance

Regulatory tolerance, allowing banks to operate below capital thresholds under pressure, may lead to moral hazard. Repullo argues that expected emergency support will lead banks to take on higher risks in advance [23]. Farhi and Tirole demonstrate that the expected bailout would generate balanced systemic risk, as all banks bear inefficient high leverage [24].

The Russian central bank has expressed willingness to provide temporary relief to banks with reliable capital recovery plans, which is a form of conditional constraint. President Nabiullina pointed out that the financial recovery mechanism launched in 2019, namely direct capitalization, is more effective than previous tools, but in order to ensure that only banks with sufficient forward-looking risk management can be alleviated, the central bank requires systemically important banks to submit financial resilience recovery plans in accordance with new regulations [25]. Therefore, regulatory tolerance is not unconditional, it is combined with enhanced planning requirements to mitigate moral hazard.

7. Conclusion

This study examines Russian banks' balance sheet adjustments during the Russia-Ukraine conflict and their systemic fragility. Balance sheet adjustments have been substantial but incomplete: banks restructured large volumes of loans, shifted funding toward domestic deposits, and used retained earnings to build capital buffers. However, these measures delayed rather than resolved credit risks. Sustained high interest rates became the primary source of vulnerability. Regulatory policies prevented acute crises but allowed vulnerabilities to accumulate, with the central bank's dual-track approach maintaining stability at the cost of reduced transparency and potential moral hazard. The banking system may face critical tests in 2026-2027 as the resolution of restructured loans coincides

with an economic slowdown and persistently high rates. Although large fiscal and regulatory buffers make a systemic crisis unlikely, the system remains highly fragile, with a shrinking margin for policy error. To enhance resilience, the central bank should accelerate provisioning, strengthen stress tests for systemically important banks, and maintain transparent communication, while the government should prepare targeted capital injections rather than blanket guarantees that encourage excessive risk-taking.

However, data may be affected by regulatory tolerance policies, potentially leading to underestimation of indicators such as the non-performing loan ratio and the capital adequacy ratio in public statistics. The analysis draws primarily on data through early 2026, leaving the evolution of risks in the latter part of 2026–2027 uncertain. Moreover, the single-case design restricts the generalizability of the results to other country contexts. Future work should incorporate granular bank-level data and comparative cases to develop a more complete picture of banking fragility under sanctions.

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