The Central Bank of Uzbekistan

Financial Stability Report

2025|1

Abbreviations

AE	Advanced economy
AUROC	Area under the receiver operating characteristic curve
CAB	Current account balance
CAR	Capital adequacy ratio
CBU	Central Bank of Uzbekistan
CCA	Caucasus and Central Asia
CCoB	Capital conservation buffer
CCyB	Countercyclical capital buffer
CET1	Common Equity Tier 1
CO_2	Carbon dioxide
CoVaR	Conditional value at risk
D-SIB	Domestic systemically important bank
DSTI	Debt service to income
DtD	Distance to default
EM	Emerging market
EVT	Extreme value theory
FCI	Financial conditions index
FSI	Financial stress index
FX	Foreign exchange
GDP	Gross domestic product
GEV	General extreme value
HHI	Herfindahl-Hirschman index
HP	Hodrick-Prescott
HQLA	High-quality liquid assets
ICR	Interest coverage ratio
IMF	International Monetary Fund
IQR	Interquartile range
JSC	Joint-stock company
LCR	Liquidity coverage ratio
LGD	Loss-given default
LTV	Loan-to-value
MPP	Macroprudential policy
NII	Net interest income
NNII	Net non-interest income
NPL	Non-performing loan
NPAT	Net profit after tax
NSFR	Net stable funding ratio
PBT	Profit before tax
PCA	Principal component analysis
PD	Probability of default
pnCCyB	Positive neutral countercyclical capital buffer
ROA	Return on assets
ROE	Return on equity
RWA	Risk-weighted assets
SD	Standard deviation
SSM	State-space model
SyRB	Systemic risk buffer
UCI	Uzbekistan Composite Index
USD	United States dollar
UZS	Uzbek soum

Financial Stability Report for H1 2025

Contents

Executive Summary

Macrofinancial conditions in Uzbekistan eased in H1 2025. Financial conditions in Uzbekistan eased due to developments in the domestic foreign exchange (FX) market, the banking sector, and the broader macroeconomic conditions. The easing of financial conditions reflects a modest reduction in risks.

Uzbekistan's banking system remains stable. The capital adequacy ratio (CAR) stands at 17.4%, well above the minimum requirement. Non-performing loans (NPLs) continue to account for a low share of the loan portfolio, and the banking system's resilience to liquidity risks has strengthened. The share of high-quality liquid assets (HQLA) within total assets is also on an upward trajectory.

The level of financial stress in the banking system remains low. In H1 2025, despite volatility in the domestic FX market, nearly unchanged conditions in the money market, and positive developments in the banking sector, the contagion risk of financial stress in the banking system remained around its historical average. Indicators of banking sector resilience also improved, with both the distance to default (DtD) and the probability of default (PD) for domestic systemically important banks (D-SIBs).

The importance of introducing macroprudential capital tools is increasing. Liquidity and borrower-based macroprudential policy (MPP) tools aimed at ensuring the stability of the country's banking system continue to be enhanced and actively applied. At the same time, there is a growing need for MPP capital tools that help mitigate the negative effects of potential cyclical systemic risks and strengthen banks' solvency.

Concerns in the corporate sector have eased. The share of corporate loans in FX has declined slightly. The ratio of the outstanding corporate loans to gross domestic product (GDP) continues to fall, widening its negative gap relative to its long-term trend. Large companies have also demonstrated improvements in their leverage ratios. In addition, both liquidity and profitability indicators across companies have strengthened.

The household's debt burden has improved due to borrower-based MPP tools and more favorable financial conditions. The tightening of the debt service-to-income (DSTI) limit on total loans to individuals has reduced the overall debt burden of the households from 36% to 33%. Positive developments have also been observed in mortgage and car loans, where households traditionally exhibit higher DSTI ratios.

The share of non-bank liabilities in the household's total debt obligations is low. 93% of all liabilities of individuals fall on bank loans. A negative gap has formed as the ratio of outstanding loans to individuals to GDP remains below its long-term trend. Multiple debt obligations among individuals who have received loans from banks are increasing.

The quality of the microdebt loan portfolio has deteriorated. High growth rates persist in the balance of microdebt extended by banks to individuals. The number of borrowers holding multiple microdebt contracts is increasing.

Concerns over regulatory arbitrage are emerging in the car loan market. The effects of indirect restrictions on car loans are materializing with some delay. Concentration risk in car

loans is decreasing. However, some banks continue to pose risks related to regulatory arbitrage[1] by circumventing existing concentration limits.

Housing prices are undergoing a correction. Increased supply in the real estate market, along with reduced speculative demand, has narrowed the gap between fundamental and market prices from 17% to 4%. Mortgage lending standards have eased slightly, and the number of working-age borrowers with mortgages is expanding. The housing affordability of households has ceased deteriorating. Housing prices are declining relative to GDP per capita.

The results of the macro stress test under the adverse scenario showed that the solvency of some banks may decrease. By the end of H1 2028, the ratios of Common Equity Tier 1 (CET1) and CAR in the banking system may decline to 6.1% and 8.4%, respectively. In the adverse scenario, additional capital is required to ensure capital adequacy. Under the adverse scenario, the risk of a bank default causing contagion into the banking system is assessed as low.
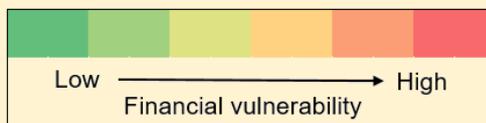
The results of the liquidity macro stress test demonstrated that the banking system's liquidity remains robust. The banking system maintains stability in covering short-term liabilities with short-term assets in national currency. The level of maturity mismatch between assets and liabilities in FX is low. Having sufficient HQLA in these banks to cover potential negative cash flows under the adverse scenario prevents liquidity risk across the banking system.

The deposit portfolio of some banks remains concentrated. As of July 1, 2025, the share of the largest depositors' funds in banks in national currency accounts for 19% of total deposits in the banking system, while in FX it accounts for 5%.

Risks that may affect the stability of the financial system persist. These risks include the instability of external financing sources, high deposit concentrations in banks, elevated credit risk in microdebts, uncertainties in housing price corrections, and the threat of cyberattacks.

---

[1] Regulatory arbitrage is when financial market participants gain comparative advantages by moving and (or) starting their activities in relatively less regulated segments of the market to circumvent restrictions.

Financial Vulnerabilities Heatmap

Vulnerabilities		2020				2021				2022				2023				2024				2025	
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Excessive credit growth	Credit-to-GDP gap																						
	Credit-to-GDP ratio growth																						
	Credit growth (YoY)																						
	Mortgage loan leverage																						
	Wholesale funding ratio																						
	Current account balance (CAB) deficit/surplus																						
Household sector	Household loan growth																						
	Real house prices																						
	House price-to-disposable income ratio																						
	Share of household loans in total credit																						
	Household debt service ratio																						
Corporate sector	Corporate loan growth																						
	Share of corporate loans in total credit																						
	Commercial real estate credit																						
	Share of FX loans																						
	Corporate credit gap																						
Liquidity and currency risks	Loan-to-deposit ratio																						
	Share of noncore funding in total liabilities																						
	Share of HQLA																						
	Share of long-term loans in total credit																						
	Share of deposits with maturity over one year																						
	Net open FX positions																						
Structural risks	Banking sector concentration (by assets)																						
	Banking system assets-to-GDP ratio																						

Low ⟶ High
Financial vulnerability

The financial vulnerabilities heatmap indicates risks in the household sector and the real estate market. In H1 2025, concerns regarding the household sector and assets market persist due to the rising volume of retail loans by banks, as well as elevated real house prices despite declines in the real estate market.

Possible credit losses arising from exposure to real estate market risks have escalated. The high leverage ratio in the mortgage portfolio, along with the rise in mortgages allocated for commercial purposes, amplifies the impact of potential weaknesses in the real estate market.

The heatmap indicates that the impact of currency volatility on the banking system has increased. As of July 1, 2025, FX claims in banks exceeded liabilities, resulting in a long currency position in the banking system. This raises concerns about the heightened exposure of banks to exchange rate fluctuations.

The significance of the banking system's financial stability for the real economy has intensified. An increase in the ratio of banking system assets to GDP indicates that the concentration of the banking system in the economy is increasing and the scope of influence of this sector is expanding.

I. Macrofinancial Conditions

At the end of H1 2025, global financial conditions eased. Volatility in international markets declined following the delay in trade tariffs announced in May 2025. Interest rates in international financial markets fell amid expectations of reductions in policy rates by the world's leading central banks. Additionally, many developing countries experienced an appreciation of their national currencies, and capital flows were restored starting from Q2 2025[2].

Global uncertainties persist. In H1 2025, the expansion of discussions on trade policy uncertainties was reflected in the rise of the Trade Policy Uncertainty Index[3]. At the same time, apprehensions remain about a slowdown in economic growth due to the rebound in trade tariffs[4]. The upsurge in the World Uncertainty Index[5] in H1 2025 indicates that economists' concerns about international uncertainties remain pronounced. Globally, the primary focus of concerns is shifting toward trade policy uncertainties. This shift, in turn, was reflected in the decline of the Geopolitical Risk[6] and Global Economic Policy Uncertainty[7] indices by the end of H1 2025.

---

[2] International Monetary Fund. (2025, July). World Economic Outlook.

[3] Matteo Iacoviello. (2025). Trade Policy Uncertainty (TPU) Index.

The index includes 7 leading newspapers: Boston Globe, Chicago Tribune, Guardian, Los Angeles Times, New York Times, Wall Street Journal, Washington Post.

[4] International Monetary Fund. (2025, July). World Economic Outlook.

[5] World Uncertainty Index. (2024). World Uncertainty Index (WUI): Global.

21 countries are included in the index: Australia, Brazil, Canada, Chile, China, Colombia, France, Germany, Greece, India, Ireland, Italy, Japan, Mexico, Netherlands, Russia, South Korea, Spain, Sweden, United Kingdom, USA.

[6] Matteo Iacoviello. (2025). Geopolitical Risk (GPR) Index.

The index includes 10 leading newspapers: Chicago Tribune, Daily Telegraph, Financial Times, Globe and Mail, Guardian, Los Angeles Times, New York Times, USA Today, Wall Street Journal, Washington Post.

[7] Economic Policy Uncertainty. (2024). Global Economic Policy Uncertainty Index.

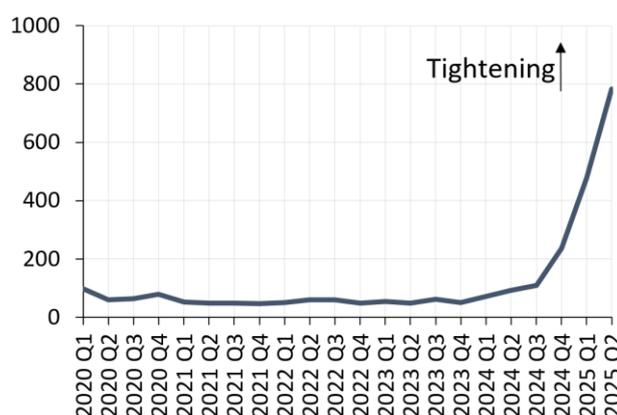**Figure 1. Global Uncertainties and Risk Indices**
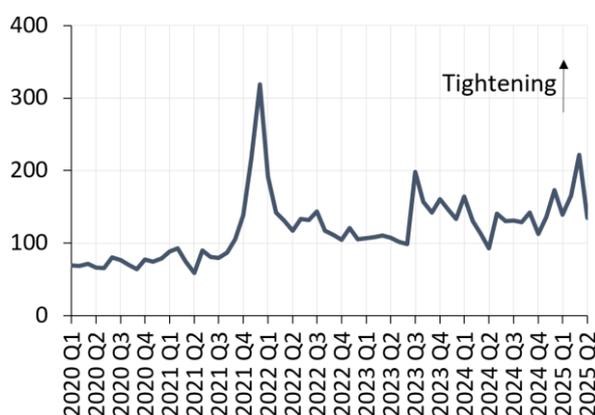
World Uncertainty Index*
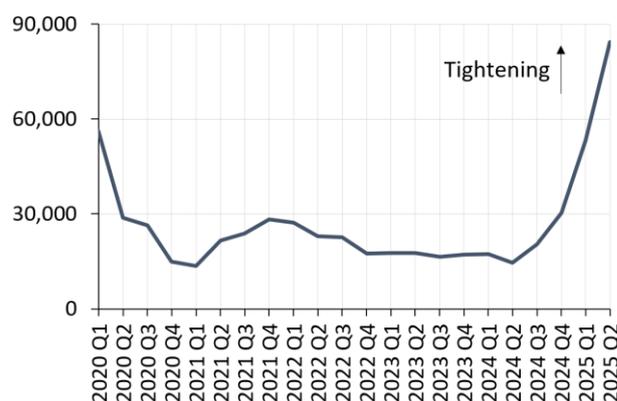
World Economic Policy Uncertainty Index**
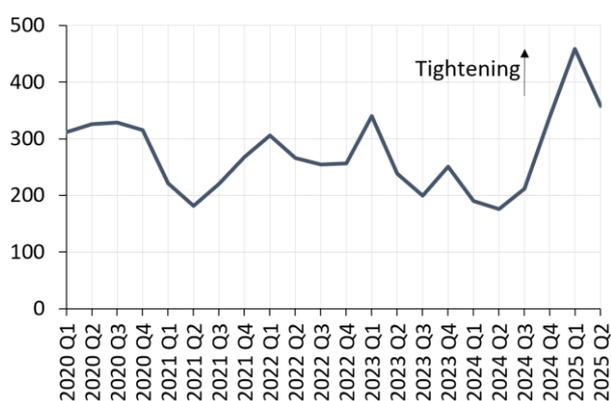
Trade Policy Uncertainty Index***

Geopolitical Risk index****

Sources: World Uncertainty Index, World Economic Policy Uncertainty Index and Matteo Iacoviello.

Notes: A high value of the indices means a high level of uncertainties and risks, while a low value means a low level of uncertainties and risks.

*The World Uncertainty Index covers 143 countries and is determined by multiplying 1,000,000 to the share of word "uncertainty" (or its variants) in the total number of words used in the Economist Intelligence Unit's quarterly country reports, and calculating the weighted average value based on the countries' GDP.

**The Global Economic Policy Uncertainty Index is determined by calculating the weighted average value based on the economic policy uncertainty indices computed for 21 countries and the countries' GDP. The Economic Policy Uncertainty index for each country is obtained by finding the proportion of articles in newspapers published in each country that contain sentences related to the words "economics", "politics" and "uncertainty" in the total number of articles in these newspapers. Then, it is normalized by setting the average value of these ratios for the years 1997–2015 to 100.

***In determining the Trade Policy Uncertainty Index, the shares of the total number of articles discussing trade policy uncertainty in the 7 leading newspapers are calculated as a percentage of the total number of articles. To obtain the final index value in a normalized form, each percentage share is set equal to 100.

****The Geopolitical Risk Index is computed by calculating the number of articles on adverse geopolitical events in the top 10 newspapers, including 6 newspapers published in the United States, 3 in the United Kingdom, and 1 in Canada, as a percentage of the total number of articles in these newspapers. The final GPR is estimated by setting the average value of the calculated shares for the years 1985–2019 to 100.

Despite fluctuations in global stock markets, an upward trend has persisted. In H1 2025, the Morgan Stanley Capital International (MSCI) index for advanced economies (AEs) stood at 3,757 USD, which was 403 USD higher compared to the corresponding period of 2024. In emerging markets (EMs), this indicator grew by 8% per year and amounted to 1,123 USD. At the same time, the MSCI World Index rose by 12% annually, reaching approximately 855 USD.

Figure 2. Morgan Stanley Capital International Indexes*, USD
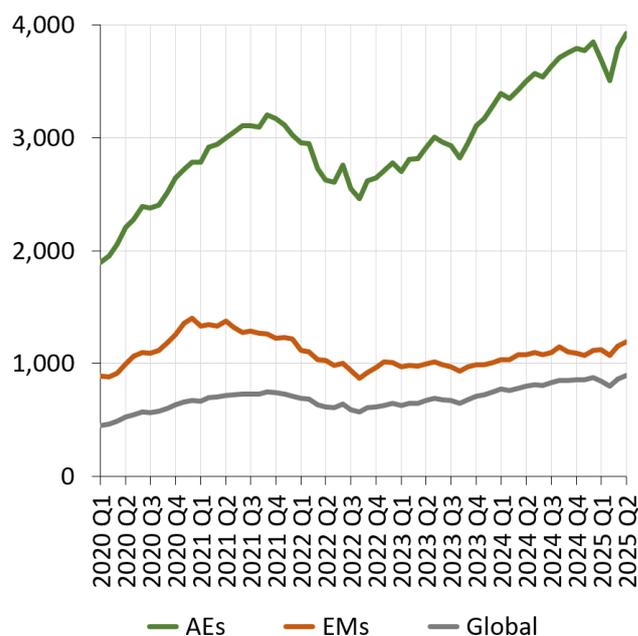
Figure 3. Global Inflation Projection (CPI) YoY, %**
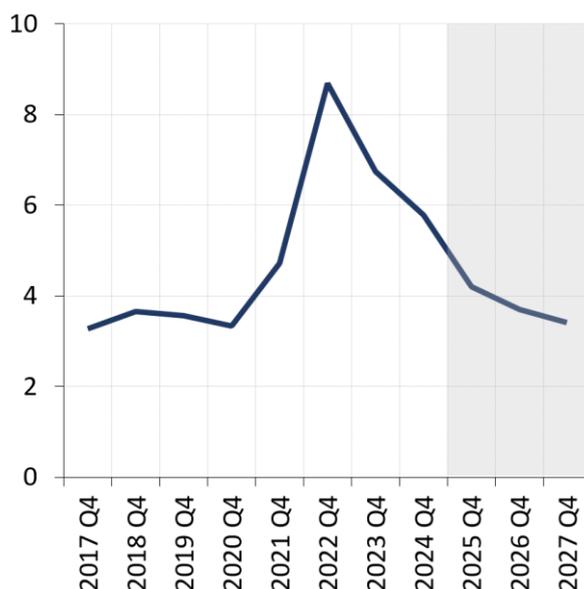
Sources: IMF and Bloomberg.

Notes: *Morgan Stanley Capital International indexes provide an overview of the global stock market by tracking the large companies' stock prices in 23 AEs and 24 EMs. If the index values increase, it means that the stock prices of the companies in the index have increased.

**The global inflation rate is determined by calculating the weighted average value of each country's inflation and GDP based on purchasing power parity. The average consumer price change was taken into account as the global inflation rate.

The global inflation rate is expected to decline. According to International Monetary Fund (IMF) projections, the average global inflation rate will be 4.2% in 2025 and fall to 3.7% and 3.4% in 2026–2027, respectively. In turn, concerns about potential disruptions in the global supply chain due to geopolitical tensions, and the consequent rise in commodity prices[8], may alter inflationary expectations.

---

[8] International Monetary Fund. (2025, October). World Economic Outlook.

Figure 4. Uzbekistan's Financial Conditions Index (FCI)[9]
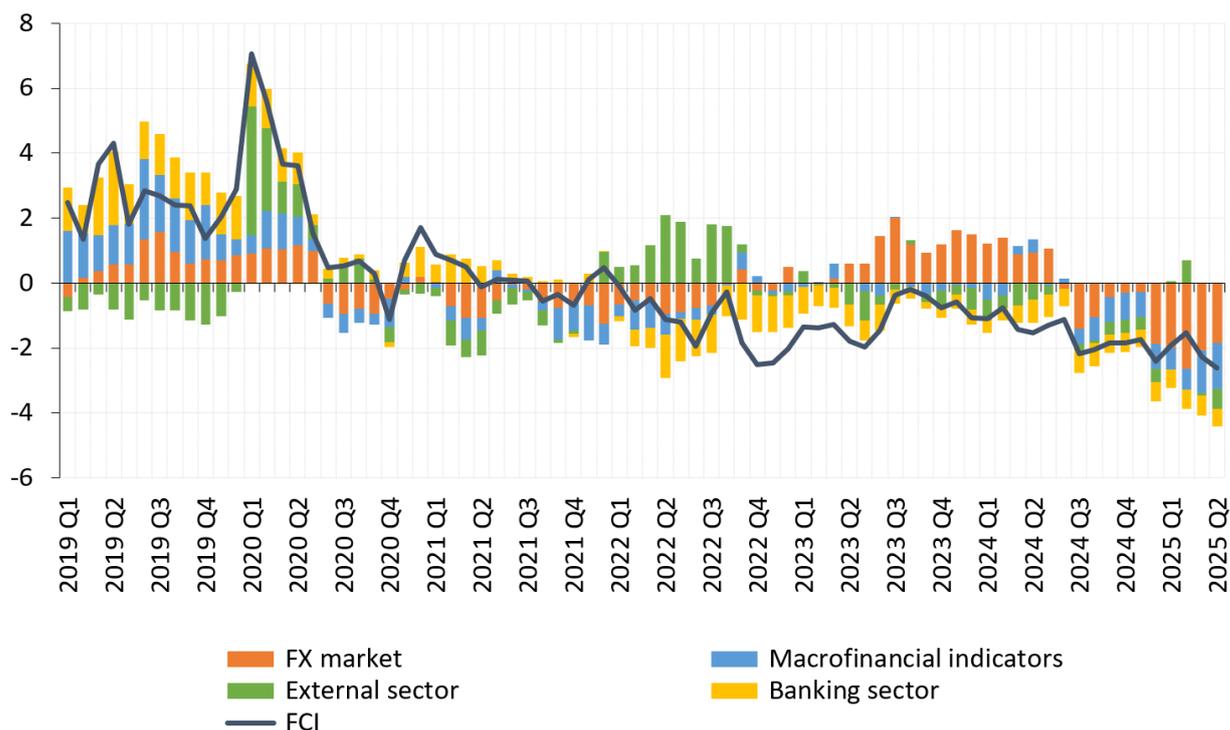
Source: CBU staff calculations.

Note: Positive values of the FCI indicate a tightening of financial conditions, while negative values indicate a loosening of financial conditions.

Due to developments in the domestic FX market, the banking sector, and the macroeconomic conditions, Uzbekistan's financial conditions have eased. Despite the volatility in the external financial sector in H1 2025, the country's financial conditions loosened owing to reduced pressures in the domestic FX market and favorable conditions in the banking sector. As of July 1, 2025, Uzbekistan's international reserves totaled 48.5 billion USD, marking an annual increase of 34%[10]. In turn, by the end of H1 2025, the national currency depreciated by 0.8% against the USD on an annual basis, while appreciating by 2.1%[11] since the beginning of 2025.

---

[9] The methodology for calculating Uzbekistan's FCI is presented in the research publications of CBU.

[10] The Central Bank of the Republic of Uzbekistan (2025). International reserves of the Republic of Uzbekistan.

[11] The Central Bank of the Republic of Uzbekistan. (2025). Archive of FX rates.

Figure 5. Annual GDP Growth Decomposition*, p.p.
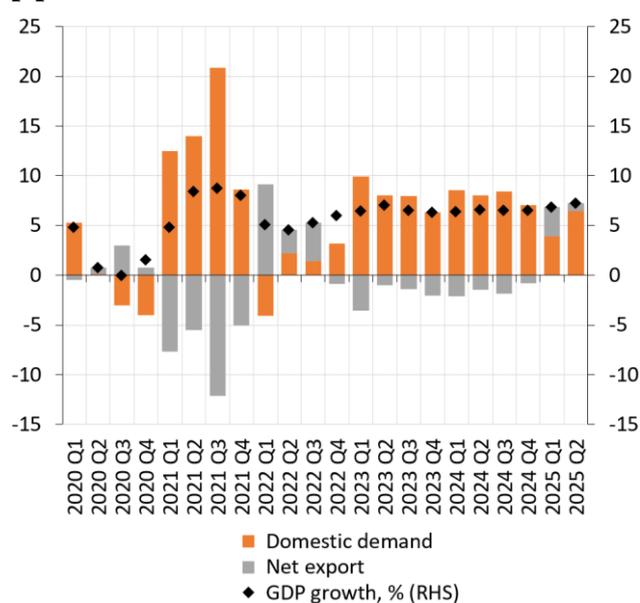
Figure 6. Growth Distribution of Uzbekistan's Main Trading Partners**[12], %

Domestic demand
Net export
GDP growth, % (RHS)

Uzbekistan
Weighted average growth
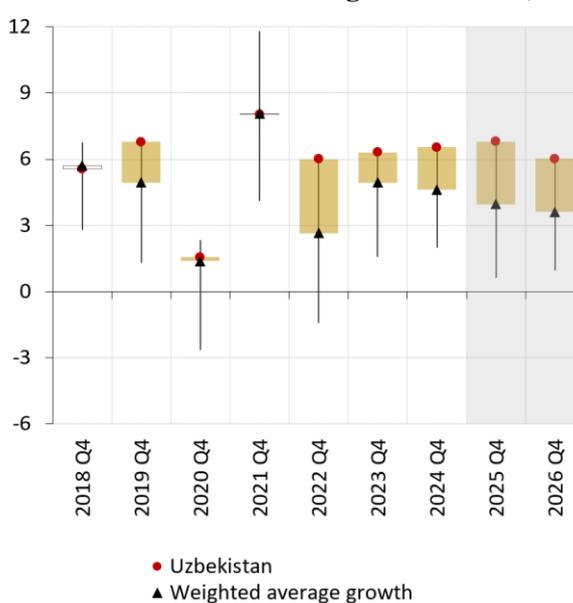
Sources: National Statistics Committee, IMF, and CBU staff calculations.

Note: *Domestic demand is the sum of consumption and gross capital formation. The statistical discrepancy in the calculation of GDP by the final consumption method is not reflected in the chart.

**The rectangle displayed in the chart represents the variation between Uzbekistan's GDP growth rate and the weighted average of GDP growth rates for main trading partners. The length of the rectangle indicates the difference between the growth rates. If Uzbekistan's GDP growth rate exceeds the weighted average, the rectangle is shaded, and if it is the opposite, the rectangle remains blank. The vertical black line on the chart represents the maximum and minimum growth rates among the seven countries for a given year.

The reduction in the negative net export had a positive effect on GDP growth. In H1 2025, the annual real GDP growth rate was 7.2%[13]. In this context, the positive contribution of the reduced negative net export to real GDP growth in H1 2025 was 0.8 percentage points (p.p.), while the contribution of domestic demand amounted to 6.5 p.p. In particular, although the annual real growth rate of final consumption expenditures within domestic demand was 8.7%[14], a decline in gross capital formation reduced the contribution of domestic demand to real GDP growth.

Uzbekistan is expected to maintain high growth rates compared with its main trading partners. By the end of 2025 and 2026, the IMF projects Uzbekistan's annual real GDP growth at 6.8% and 6%[15], respectively, while the World Bank forecasts growth at 6.2% and 6%[16]. Based on IMF data, the weighted average growth rates of Uzbekistan's main trading partners are expected to reach 4% and 3.6% in 2025–2026, respectively.

---

[12] The countries of South Korea, Russia, Turkey, China and Kazakhstan are taken into account.

[13] National Statistics Committee. (2025). Growth rates of gross domestic product (by expenditures method, quarterly).

[14] National Statistics Committee. (2025). Growth rates of final consumption expenditures (quarterly).

[15] International Monetary Fund. (2025, October). World Economic Outlook.

[16] World Bank. (2025, Fall). Jobs and Prosperity.

The negative current account balance (CAB) contracted. In H1 2025, the CAB narrowed from 2.9 billion USD in the corresponding period of 2024 to 156.3 million USD. The positive primary and secondary income balance amounted to 6.2 billion USD. Also, the annual growth of exports of goods and services exceeded the growth of imports by 19%. As a result, the trade balance deficit contracted by 20% in H1 2025 compared to the same period in 2024, reaching 6.4 billion USD[17].

Figure 7. Quarterly Distribution of CAB, billion USD
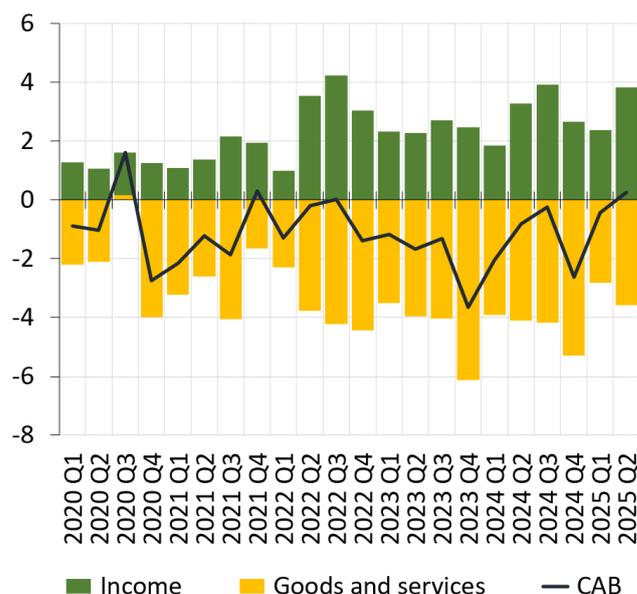
Figure 8. Bank Liabilities to Non-Residents as a Share of GDP, %
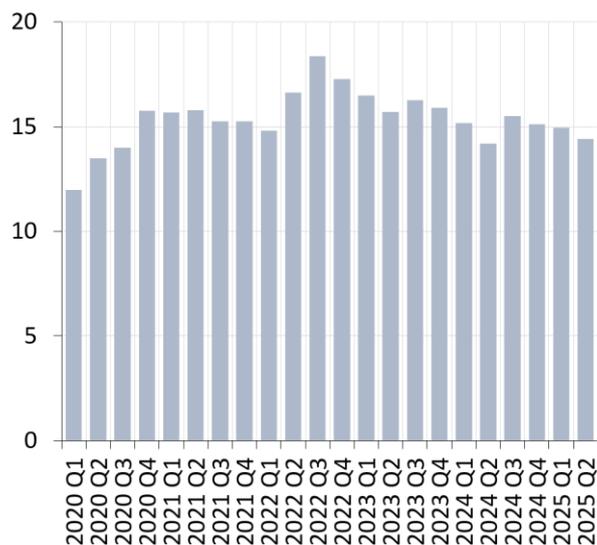
Source: CBU.

The banking system's liabilities to non-residents to GDP remained unchanged. By the end of H1 2025, the liabilities of banks to non-residents rose by 20% annually[18]. In turn, the country's GDP expanded in line with the growth of liabilities to non-residents in the banking system. As a result, the ratio of banks' liabilities to non-residents to GDP stood at 14% and remained almost unchanged compared to the same period of 2024.

---

[17] The Central Bank of the Republic of Uzbekistan. (2025). Balance of payments of the Republic of Uzbekistan (analytical presentation).

[18] The Central Bank of the Republic of Uzbekistan. (2025). Statistical Bulletin for June 2025.

Box 1. Growth at Risk

The Growth at Risk (GaR)[19] model is employed to assess the potential impact of prevailing macrofinancial conditions on future real GDP growth. Using this model, the distribution of expected real GDP growth under the influence of macrofinancial factors is derived, and the probability of an economic contraction is quantified.

When applying the GaR model, a continuous conditional distribution of future GDP growth is derived[20]. In this context, Uzbekistan's real GDP growth for the upcoming year was estimated at various quantiles using a quantile regression model[21] that takes into account the financial cycle index[22] and current real GDP growth.

Through the quantile regression model, real GDP growth in future periods is estimated in different $q \in (10, 25, 50, 75, 90)$ quantiles as follows:

$$y_{t+h}^q = \alpha^q + \beta_C^q X_{C,t} + \beta_G^q X_{G,t} + \varepsilon_{t+h}^q$$

Where,
q – quantile;
t – time series;
h – quarter;
y_{t+h}^q – real GDP growth h quarters ahead for quantile q;
$X_{C,t}$ – financial cycle index;
$X_{G,t}$ – real GDP growth rate;
α^q – constant term;
ε_{t+h}^q – residual;
β_C^q, β_G^q – unknown coefficients.

Real GDP growth across different quantiles for the upcoming period allows for the construction of the conditional distribution. In particular, the parameters of the quantile regression model estimated at different quantiles are used to determine the estimated discrete values of the quantile regression for the next period.

---

[19] Prasad, A., Elekdag, S., Jeasakul, P., Lafarguette, R., Alter, A., Xiaochen Feng, A., & Wang, Ch. (2019). Growth at Risk: Concept and Application in IMF Country Surveillance. IMF Working Paper.

[20] GaR model methodology is presented in Financial Stability Report for 2024.

[21] Quantile regression model methodology is presented in Financial Stability Report for 2024.

[22] The financial cycle index methodology is presented in the Financial Stability Report for 2023.

The continuous conditional distribution function is obtained by fitting a skew-t [23] distribution to the estimated discrete [24] values of the quantile regression. Future real GDP growth is derived by fitting a skew-t distribution to predicted values of the conditional quantile regressions [25].

Figure 9. GaR Model Results for Real GDP Growth Rate over the next year
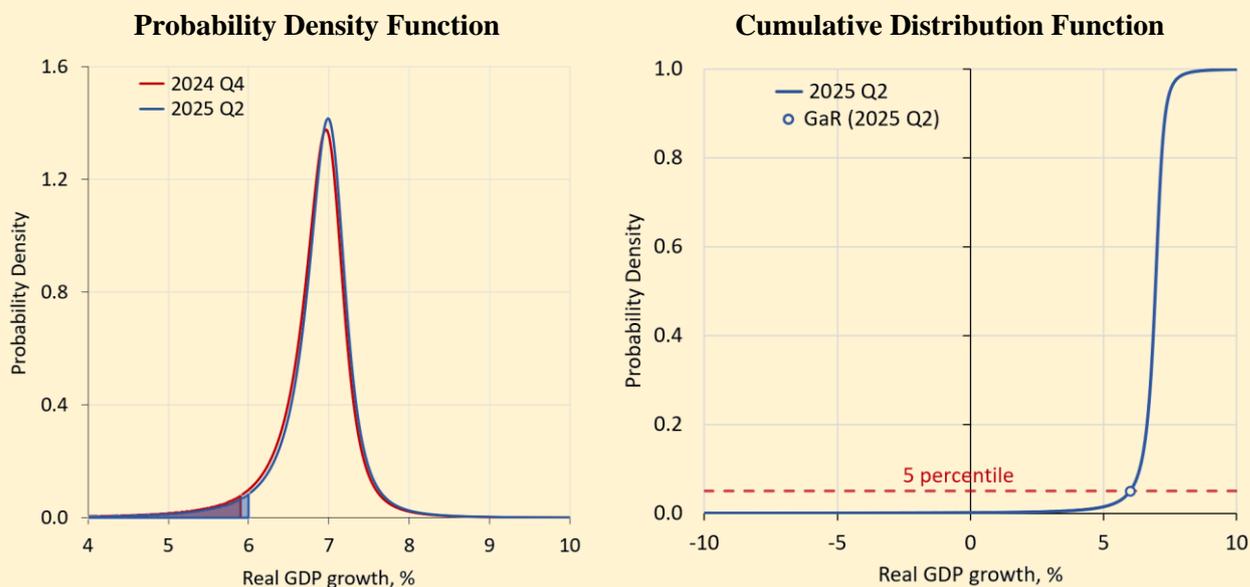
Sources: National Statistics Committee and CBU staff calculations.

Note: The probability density function represents the probability density [26] of a random variable over a given interval. The cumulative distribution function represents the degree of probability [27] that a random variable will assume a certain value and is determined by taking the integral from the probability density function.

---

[23] Basalamah, D. (2017). Statistical Inference for a New Class of Skew T Distribution and Its Related Properties. Bowling Green State University.

[24] Discrete values are a limited number of values that do not vary continuously within certain events and processes.

[25] Drenkovska, M., & Volcjak, R. (2022). Growth-at-Risk and Financial Stability: Concept and Application for Slovenia. Banka Slovenije.

[26] Probability density is the probability of occurrence of a random variable corresponding to a specified interval unit. The probability density will have values not smaller than 0.

[27] The degree of probability is a quantitative indicator of the possibility of occurrence. The probability level is formed between 0 and 1.

The skew-t distribution is described using mean, standard deviation (SD), skewness, and degrees of freedom parameters. The skew-t distribution is generated using the Student-t distribution[28]. In this case, the standard skew-t distribution with mean of zero and one SD is asymmetric. Multiplying the probability density function and the distribution function of the Student-t distribution generates the probability density function of the skew-t distribution. The optimal estimate of the unknown parameters is obtained by minimizing the squared distance between the quantile regression values and the inverse distribution function of the skew-t distribution.

In minimization, the parameter-dependent representation of the inverse distribution function of the skew-t distribution is utilized. The inverse distribution function of this skew-t distribution is defined using the Cornish-Fisher expansion[29].

The unknown parameters are estimated using the approximate inverse t-distribution derived by the Cornish-Fisher expansion. The 5% probability value of the skew-t distribution with unknown parameters serves as the output of the GaR model. The GaR model assesses the impact of financial conditions and vulnerabilities on the likelihood of weak economic growth in the future.

According to the results of the GaR model, the magnitude of risks that may negatively affect the growth of Uzbekistan's economy in the forthcoming period has slightly declined. The result of the GaR model at the end of the H1 2025 showed that the economic growth rate could reach 6% in the next year with a 5% probability under risk conditions. In turn, the risk-adjusted real GDP growth rate by the end of 2024 was estimated at 5.9% through the GaR model. At the end of H1 2025, the higher projected real GDP growth for the next year suggests an easing of financial conditions in the country and a marginal reduction in the scale of risks.

---

[28] Student-t distribution is a type of symmetric distribution used to estimate the mean when the SD of a random variable is unknown. As the sample size increases, this distribution converges toward the normal distribution. The probability density function of the Student-t distribution takes the following form:

$$t_v(x) = \frac{\Gamma\left(\frac{v+1}{2}\right)}{\sqrt{\pi v}\,\Gamma\left(\frac{v}{2}\right)}\left(1+\frac{x^2}{v}\right)^{-\frac{v+1}{2}}$$

$$v = t - 1$$

$$\Gamma(p) = \int_0^\infty x^{p-1}e^{-x}dx.$$

Where,

$t_v(x)$ – probability density function;
v – degrees of freedom;
t – sample size;
$\Gamma(p)$ – Gamma function.

[29] Amedee-Manesme, C., & Barthelemy, F. (2012). Cornish-Fisher Expansion for Real Estate Value at Risk.

II. Financial Sector

2.1. Banking Sector

In H1 2025, the financial stability of Uzbekistan's banking system maintained at a favorable level. Banks' liquidity improved significantly. In addition, the CAR stood at 17.4%, developing above minimum requirements.

The financial stress condition in banking system remained low. The Financial Stress Index (FSI), influenced by volatility in FX market [30], unchanged conditions in money market, and positive developments in banking sector [31], stayed below the sum of its mean and one SD in H1 2025.

Figure 10. Uzbekistan's Financial Stress Index
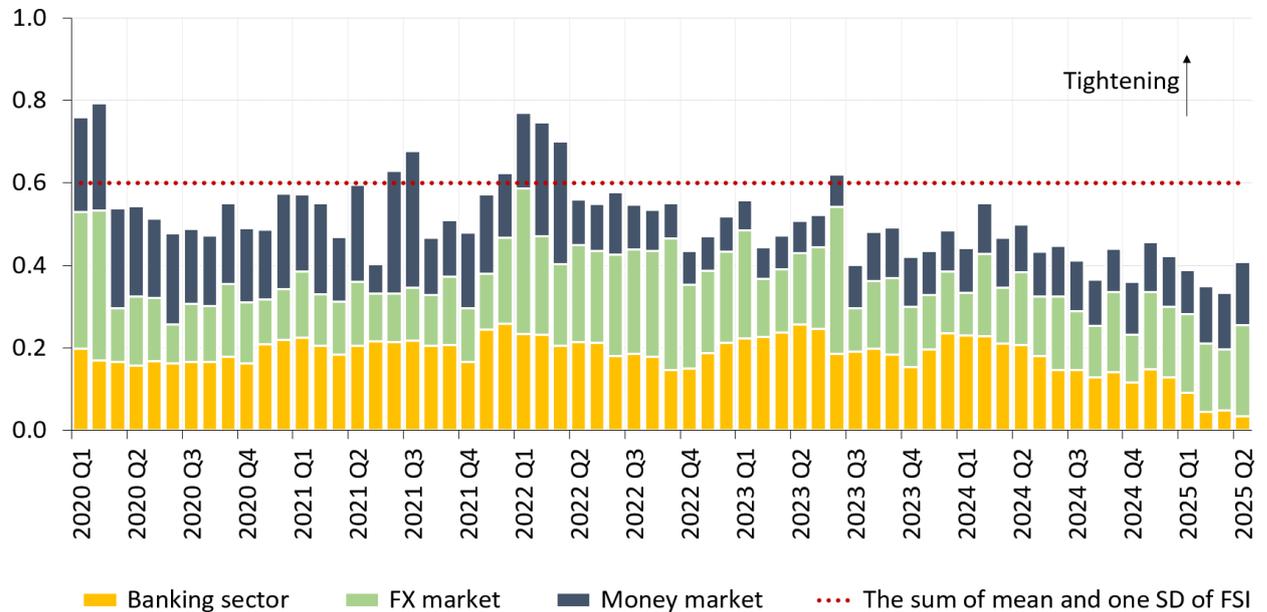
Source: CBU staff calculations.

Figure 11. Bank-by-Bank ΔCoVaR
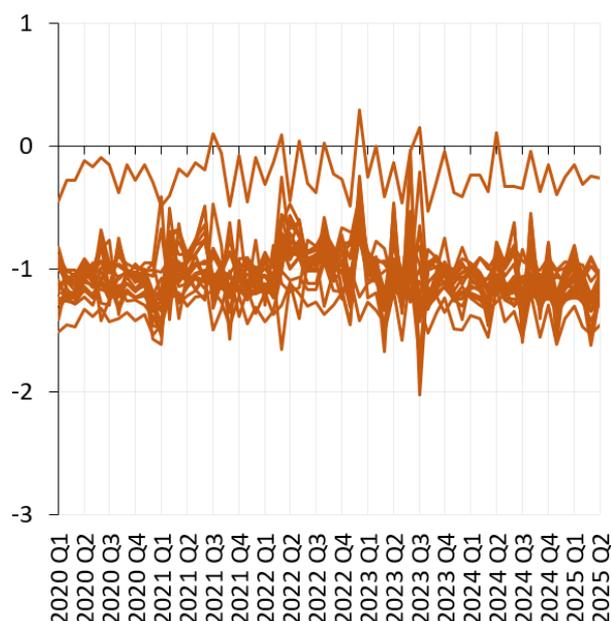
Figure 12. ΔCoVaR for Banking System
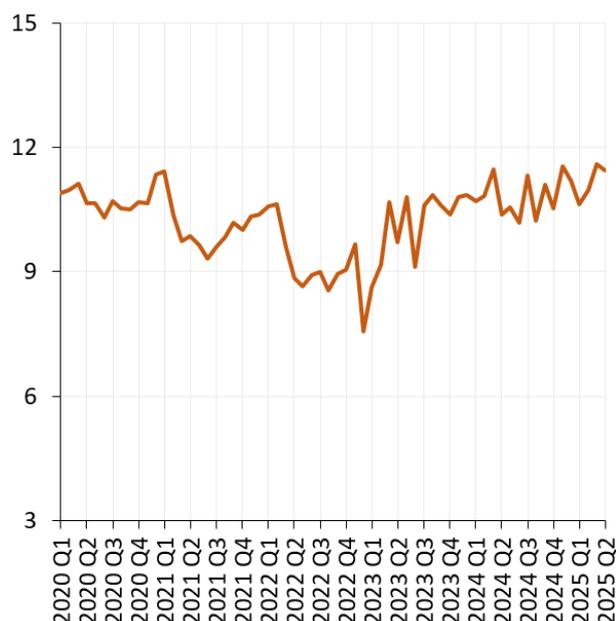
Source: CBU staff calculations.

Notes: The ΔCoVaR for the banking sector was calculated using data from 21 banks, due to the long time series available during the observation period and the similarity of individual bank conditions to the banking system.

The ΔCoVaR for the banking sector was calculated as the absolute value of the sum of the products of each bank's ΔCoVaR and their respective shares of total banking system capital. The increase in the ΔCoVaR means that systemic risk in the banking system is building up, while the decrease in ΔCoVaR means that systemic risk is decreasing.

The ΔCoVaR for banking system is presented using the exponential moving average. The exponential moving average is a technique used to smooth out the value of an indicator by reducing random and short-term fluctuations. Unlike the simple moving average, this method gives more weight to recent values of the indicator, making it a more accurate representation of current changes in its value.

The risk level associated with the contagion of financial stress to the banking system established in line with its historical average trend. In H1 2025, due to the improvement in banks' liquidity, no sharp fluctuations were observed in the ΔCoVaR[32]. Moreover, in the majority of banks, the risk of financial stress contagion exhibited a stable trend.

Credit market conditions were stable. The private credit-to-nominal GDP, bank liabilities-to-capital, and the interest coverage ratios (ICR) remained steady. In H1 2025, the private credit-to-nominal GDP ratio was almost unchanged compared to the corresponding period in 2024, standing at around 31%. Meanwhile, the ICR and the ratio of bank liabilities-to-capital amounted to 19% and 580%, respectively.

---

[32] The methodology of the dynamic ΔCoVaR model is presented in research publications of the CBU.

Figure 13. Credit Market Conditions
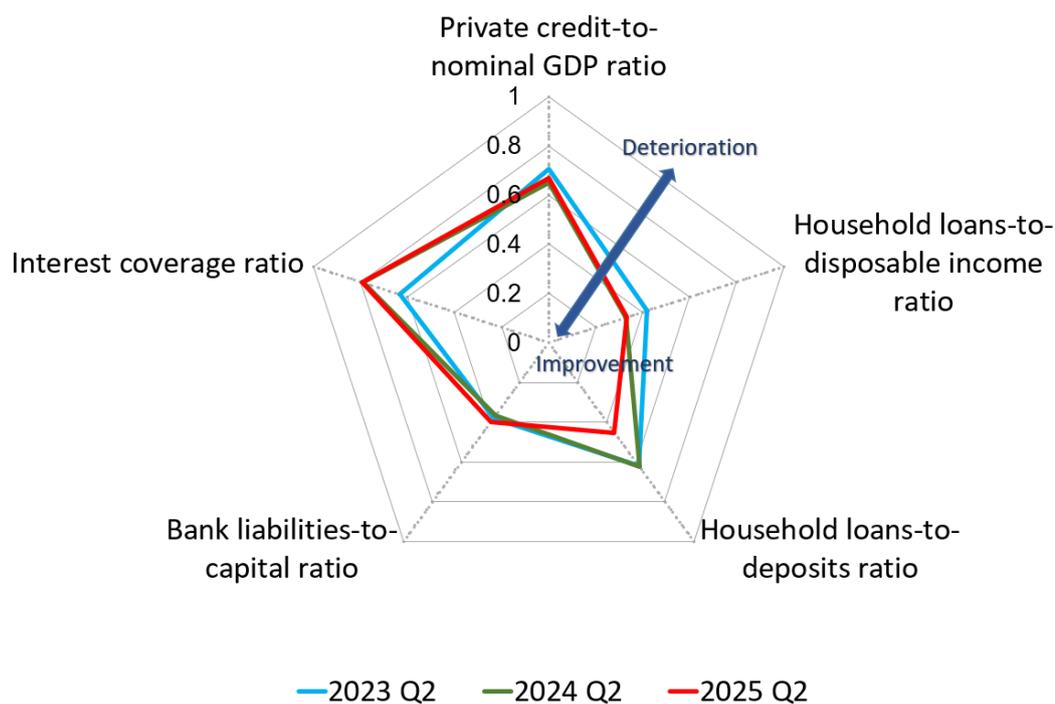
Sources: National Statistics Committee and CBU staff calculations.

A positive trend was observed in the household loans-to-deposits ratio. As of 1 July, 2025, the ratio of retail loans-to-deposits stood at 135%, decreasing by 19 p.p. compared to the same period in 2024. The annual growth of outstanding household loans reached 22%, while household deposits expanded by 40% YoY basis[33], totaling 146 trillion UZS.

---

[33] The Central Bank of the Republic of Uzbekistan. (2025). Statistical Bulletin for June 2025.

Figure 14. Financial Soundness Conditions   **Figure 15. Banking System Resilience**
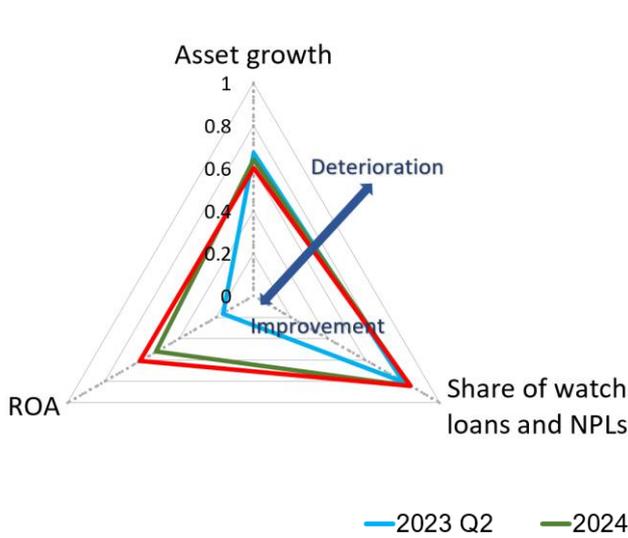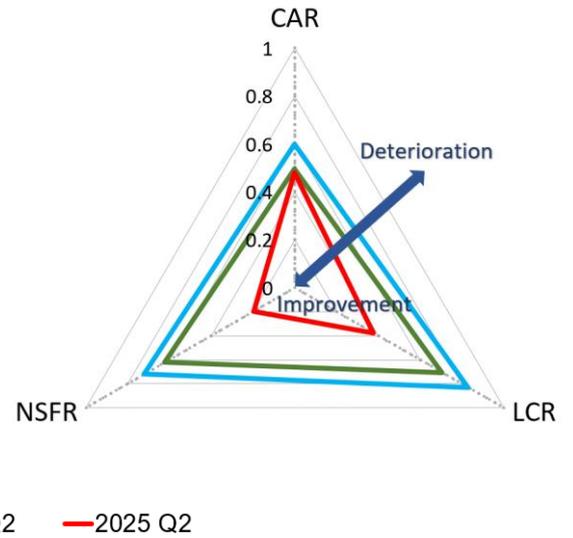
Source: CBU staff calculations.

In the financial soundness conditions of the banking system, no significant changes were observed. As of 1 July, 2025, the annual asset growth rate of banking system reached 23%, accelerating by 4 p.p. compared to the same period in 2024. Although banks' profit before tax (PBT) rose by 13% annually, the return on assets (ROA) persisted at 2% due to the rapid expansion of total assets. In addition, the share of watch loans and NPLs in the banking system's loan portfolio stood at 21%, remaining unchanged from the corresponding period in 2024.

The resilience of the banking system to liquidity risks improved. At the end of H1 2025, the net stable funding ratio (NSFR) amounted to 117%, increasing by 5 p.p. compared to the corresponding period of 2024. Meanwhile, liquidity coverage ratio (LCR) reached 195%, rising by 31 p.p. YoY[34].

---

[34] The Central Bank of the Republic of Uzbekistan. (2025). Statistical Bulletin for June 2025.

Figure 16. Decomposition of Bank Assets, %

Figure 17. Decomposition of Banks' Funding Sources, %
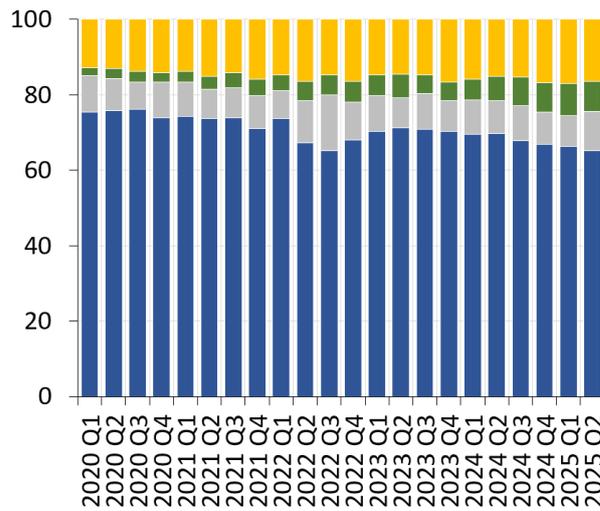
Legend (Figure 16):
- Loans
- Claims on other banks
- Investments and securities
- Other
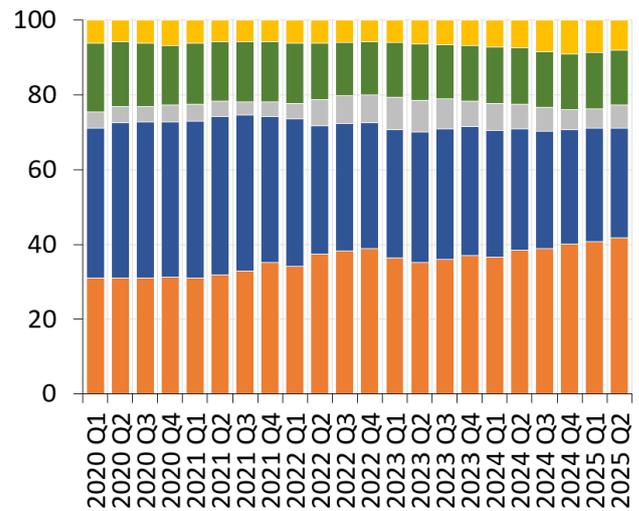
Legend (Figure 17):
- Deposits
- Loans
- Liabilities to other banks
- Equity
- Other

Source: CBU.

Loans account for the largest share of the banking system assets. As of July 1, 2025, the total banking system assets increased to 852.2 trillion UZS, with loans constituting 65%. At the same time, the share of funds held in other banks in total assets amounted to 10%, while the share of investments and other securities reached 8%.

The share of deposits as a source of bank funding continues to rise. By the end of H1 2025, deposits accounted for 42% of banking system's liabilities, rising by 3 p.p. compared to the corresponding period of 2024. Additionally, loans and capital constituted 29% and 15% of total funding sources in the banking system, respectively.

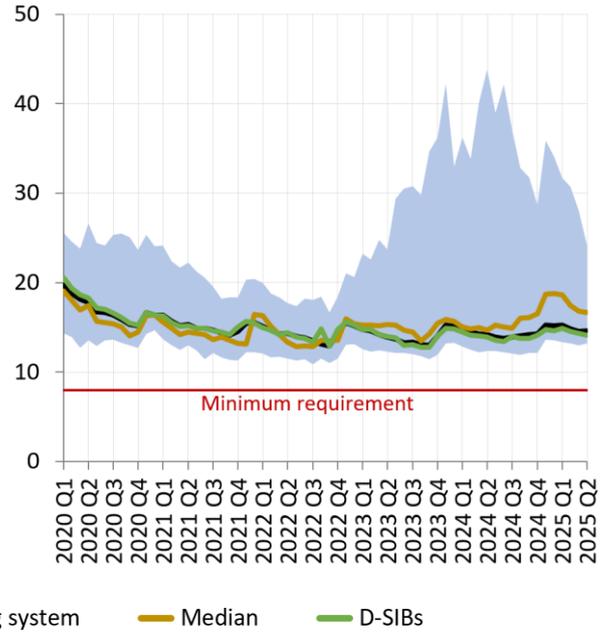**Figure 18. CAR in Banking Sector, %**
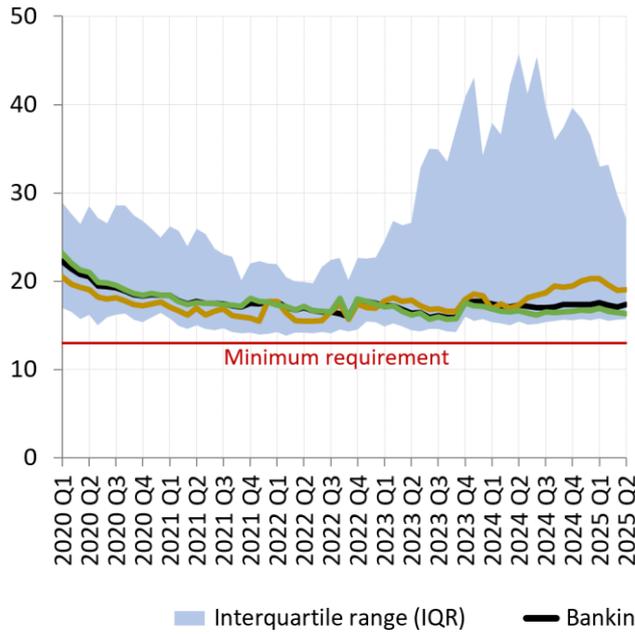
Figure 19. CET1 Ratio in Banking Sector, %

Interquartile range (IQR) — Banking system — Median — D-SIBs

Source: CBU.

The interquartile range[35] (IQR) of the banking system's CAR is narrowing. By the end of H1 2025, the CET1 capital ratio of the banking system stood at 14.6%, exceeding the minimum requirement. In addition, the CAR and CET1 ratio of D-SIBs were 16.3% and 14.1%, respectively, remaining unchanged compared to the same period in 2024.

Figure 20. RWA Density by Country, % (as of July 1, 2025)
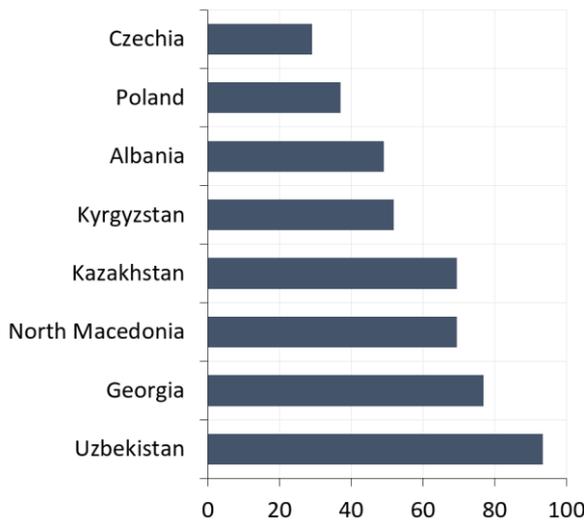
Figure 21. RWA Density and Return on RWA (RORWA) in Uzbekistan, %

RoRWA
RWA density
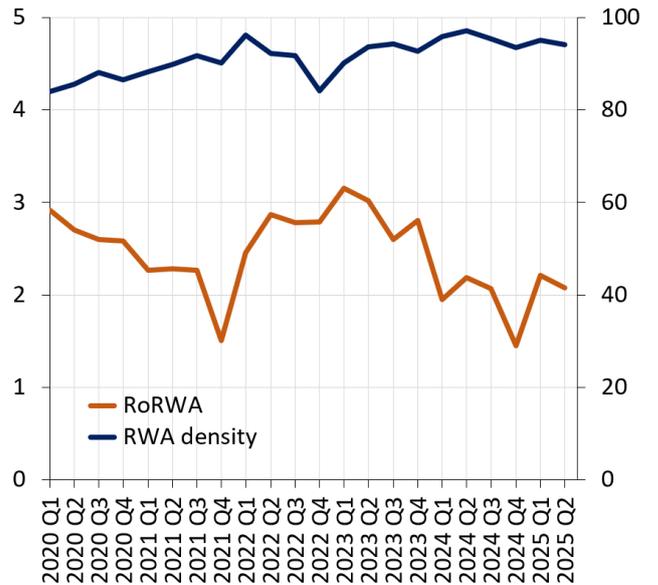
Sources: National authorities and CBU staff calculations.

---

[35] The IQR is the interval between the 25th and 75th quantile boundaries.

Risk-weighted assets (RWA) density in Uzbekistan is higher than in some countries of the Caucasus and Central Asia (CCA), and other regions. As of July 1, 2025, the RWA density[36] in Uzbekistan was 94%. The total amount of RWA in the banking system of Uzbekistan grew by 20% annually, reaching 802.6 trillion UZS[37]. Meanwhile, at the end of H1 2025, the RORWA of banks in Uzbekistan amounted to 2%.
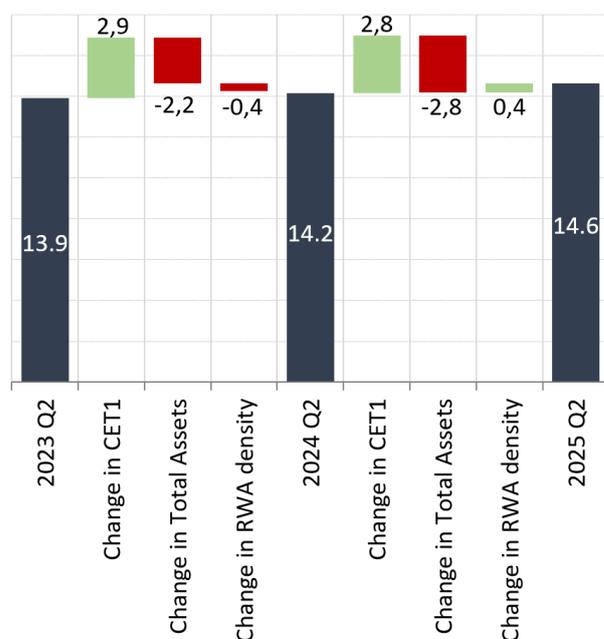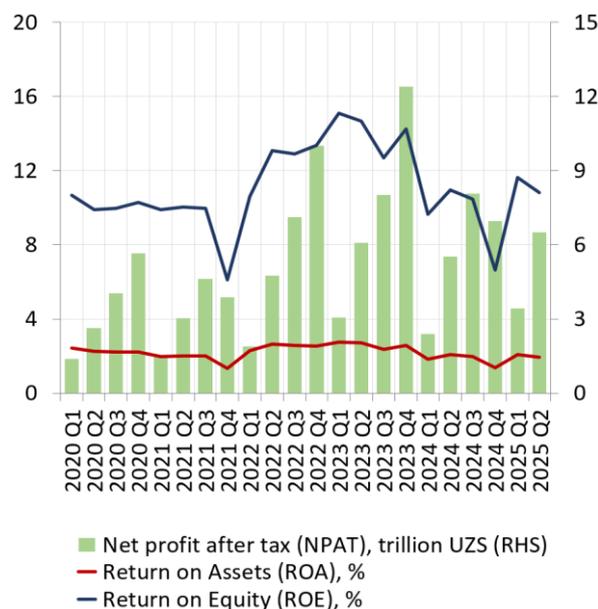
Figure 22. Changes in CET1 Ratio, %	Figure 23. Profitability in Banking Sector

Source: CBU.

The decline in the RWA density had a positive impact on the CAR. As of July 1, 2025, a 2.9 p.p. reduction in the RWA density compared to the corresponding period in 2024 contributed positively to the CET1 capital ratio by 0.4 p.p. Also, the increase in total assets had a negative impact of 2.8 p.p. on the annual change of the CET1 ratio, while the rise in the Tier 1 capital exerted a 2.8 p.p. upward impact.

Banks' return on equity (ROE) remained stable. In H1 2025, the NPAT of banks reached 6.5 trillion UZS, marking an increase of 18% compared to the same period in 2024. In addition, ROE stood at 10.8%[38].

---

[36] To calculate RWA density, the amount of RWA is divided by total assets. The RWA density provides a measure of riskiness of assets. An increase in the RWA density indicates a deterioration in overall risk profile of bank assets, while a decrease in the RWA density indicates an improvement in risk quality of assets.

[37] The Central Bank of the Republic of Uzbekistan. (2025). Statistical Bulletin for June 2025.

[38] The Central Bank of the Republic of Uzbekistan. (2025). Statistical Bulletin for June 2025.
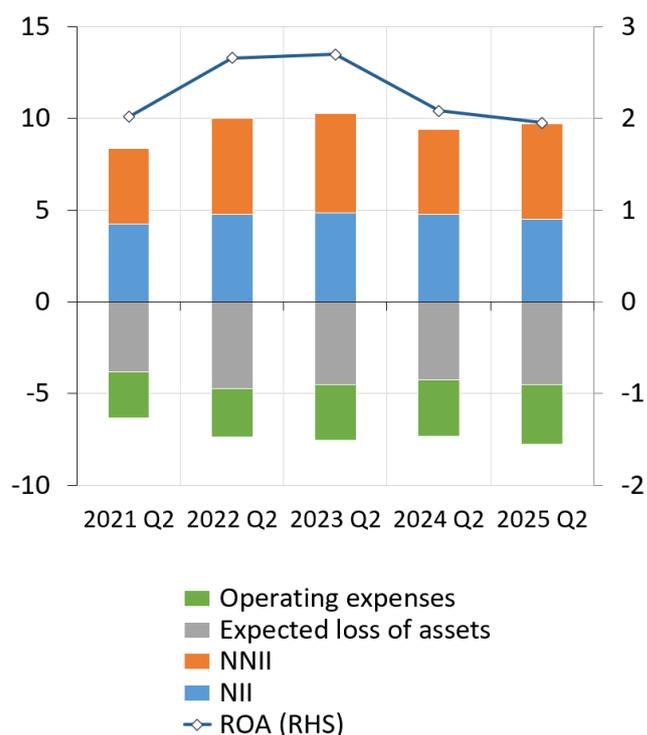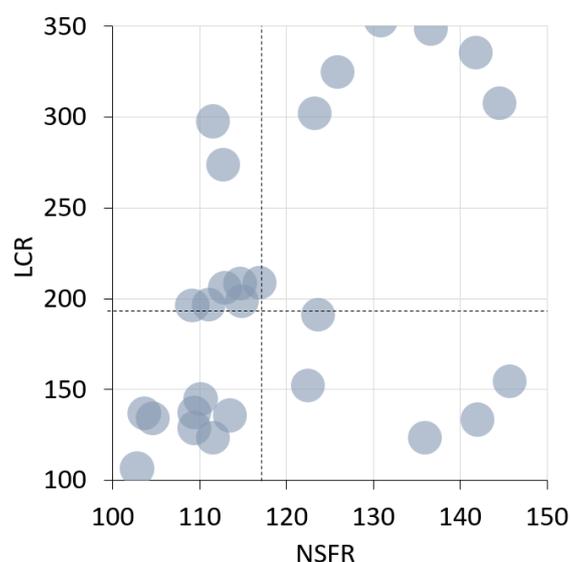
Figure 24. ROA Decomposition for Banking Sector, %

Figure 25. Bank-by-Bank Liquidity Indicators, % (as of July 1, 2025)

Legend (Figure 24):
- Operating expenses
- Expected loss of assets
- NNII
- NII
- ROA (RHS)

Source: CBU.

Note: The continuous straight lines represent the average values of indicators for the banking system as of July 1, 2025. Banks with LCR and NSFR exceeding 350% and 150%, respectively, are excluded in the graph.

The increase in net non-interest income (NNII) was one of the main factors positively affecting ROA. In H1 2025, compared to the same period in 2024, operating expenses and expected loss on assets rose by 29% and 28%, respectively, exerting a negative impact on ROA. Banks generated 21.1 trillion UZS in NNII and 18.1 trillion UZS in net interest income (NII), representing growth of 37% and 13%, respectively, relative to the corresponding period in 2024[39].

---

[39] The Central Bank of the Republic of Uzbekistan. (2025). Statistical Bulletin for June 2025.
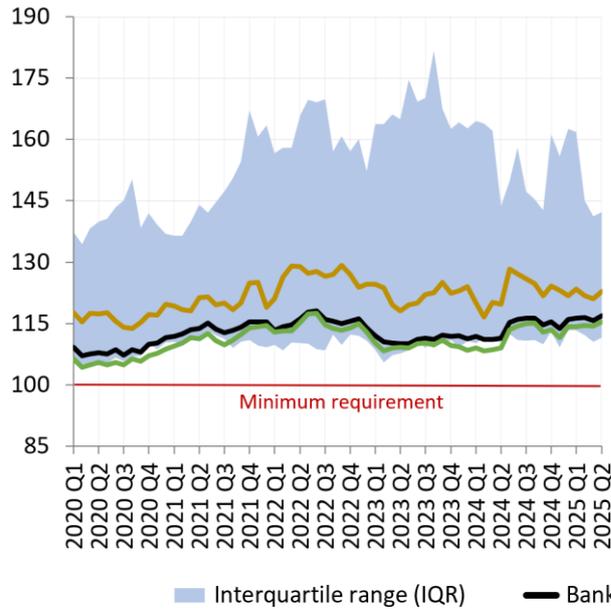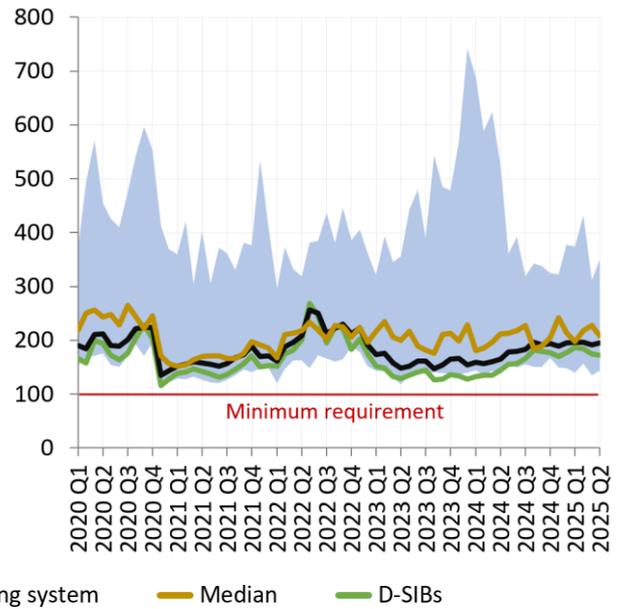
Figure 26. NSFR in Banking System, %

Figure 27. LCR in Banking System, %

Legend: Interquartile range (IQR) ▬ Banking system ▬ Median ▬ D-SIBs

Source: CBU.

Banks' liquidity is developing positively. As of July 1, 2025, the LCR for D-SIBs reached 172%, with annual growth of 28 p.p., standing below the banking system median. The NSFR for both the banking system and D-SIBs remained close to the lower bound of the IQR.

The share of HQLA in total assets is on the rise. The HQLA-to-total assets ratio stood at 18% as of July 1, 2025, increasing by 4 p.p. compared to the same period in 2024. In this context, cash and other cash items, along with claims on the CBU, were primary contributors to the growth in HQLA, rising by 30% and 51%[40], respectively, on year-on-year basis.

---

[40] The Central Bank of the Republic of Uzbekistan. (2025). Consolidated balance of commercial banks.

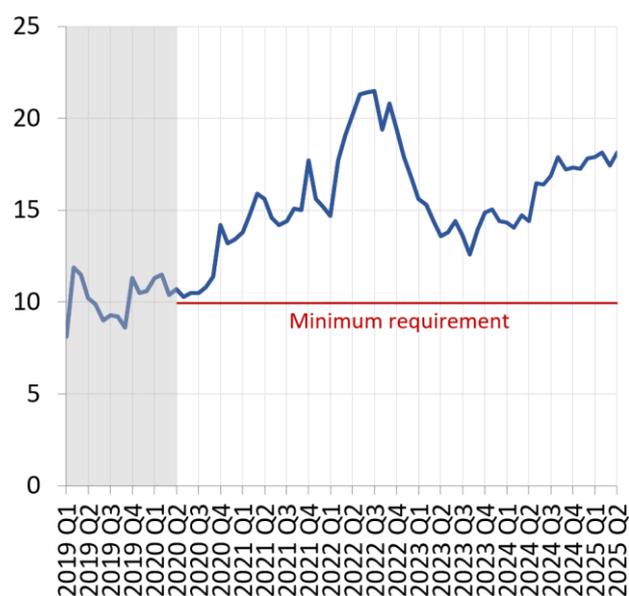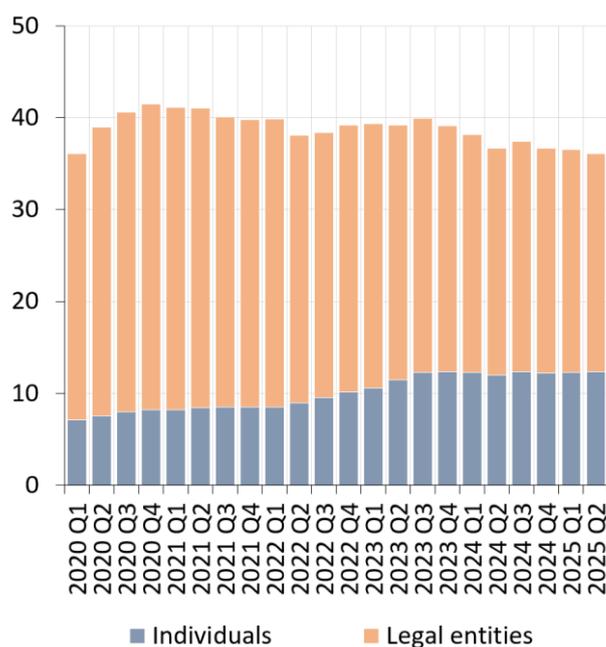**Figure 28. HQLA-to-Total Assets Ratio, %**

Figure 29. Loans to individuals and Legal Entities-to-GDP Ratio, %

Source: CBU.

Note: As of June 1, 2020, the CBU has set a minimum requirement of 10% for the ratio of HQLA of banks to total assets.

The share of loans to individuals in banks' loan portfolios continues to grow. By the end of H1 2025, the ratios of loans to individuals and legal entities to GDP amounted to 12% and 24%, respectively. Retail loans accounted for 34% of total bank loans, rising by 2 p.p. compared to the same period in 2024.

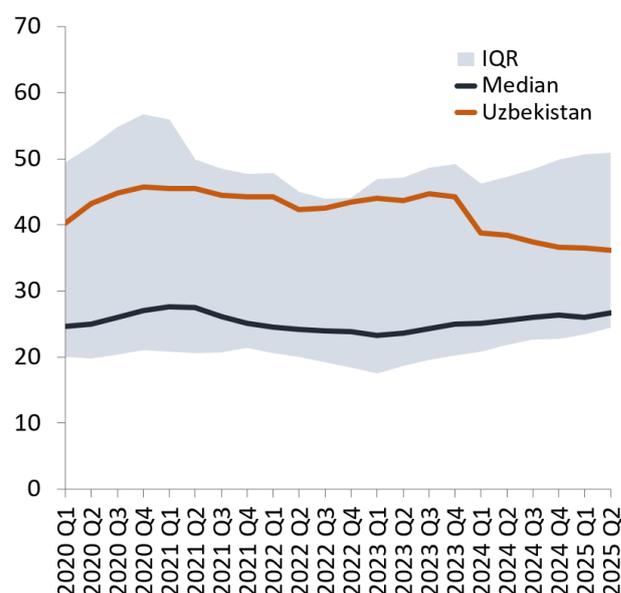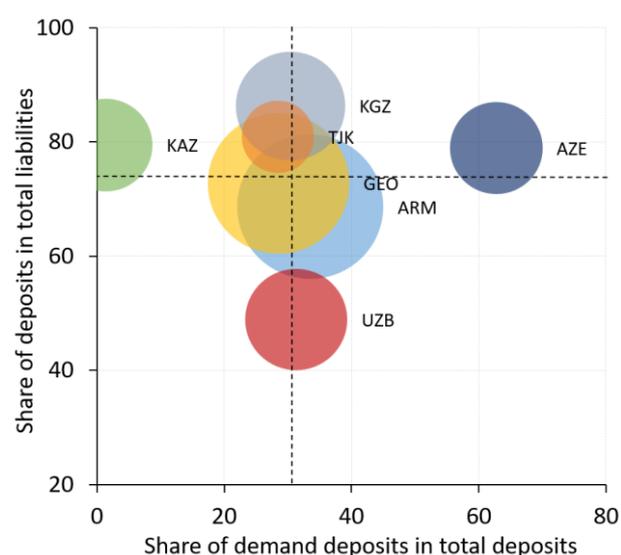**Figure 30. Total Loans-to-GDP Ratio in CCA Countries*, %**

Figure 31. Share of Deposits in CCA Countries**, % (as of July 1, 2025)

Sources: National authorities, National Statistics Committee and CBU staff calculations.

Note: *Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan are included.

**The bubble size represents the share of total banking assets in the country's GDP. The dashed straight lines represent the average values of the indicators for the CCA countries as of July 1, 2025.

In Uzbekistan, the share of deposits in bank liabilities is establishing at a relatively low level. As of July 1, 2025, deposits accounted for 49% of the total banking system liabilities of Uzbekistan, which is 25 p.p. lower than the average value in certain CCA countries. Also, the total loans-to-GDP ratio in Uzbekistan exceeded the median of CCA countries by 9 p.p.

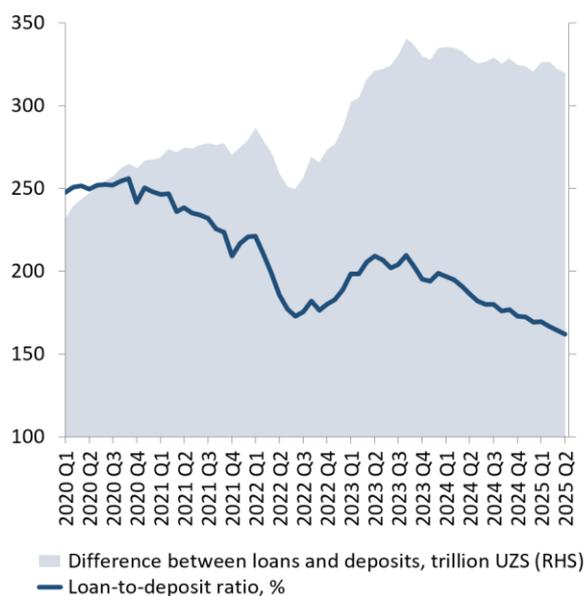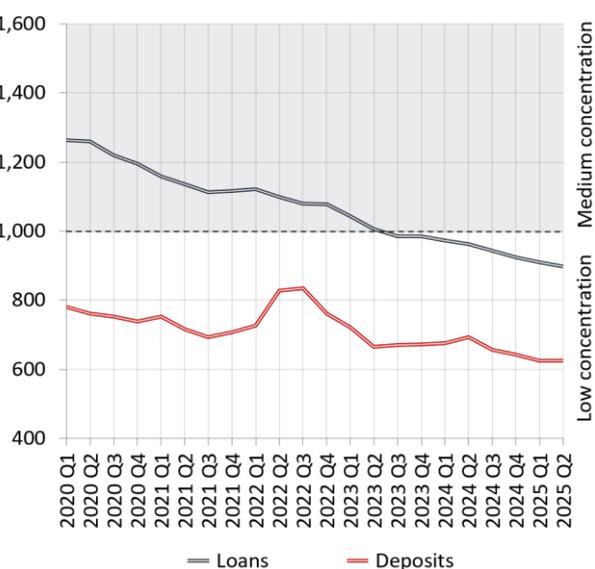**Figure 32. Loan-to-Deposit Ratio and Difference between Loans and Deposits, %**

Difference between loans and deposits, trillion UZS (RHS)
Loan-to-deposit ratio, %

Figure 33. Concentration of Outstanding Loans and Deposits, HHI*

Loans — Deposits

Source: CBU.

Note: *The Herfindahl-Hirschman Index (HHI) categorizes the level of competition in the banking services market into the low concentration (below 1000), medium concentration (from 1000 to 1800), and high concentration (above 1800) groups. The HHI is calculated as the sum of the squares of each bank's shares of deposit and loan balance in the total banking system deposit and loan balance.

Deposit growth is faster than lending. At the end of H1 2025, the loan-to-deposit ratio declined to 162%, contracting by 24 p.p. compared to the corresponding period in 2024. In this context, annual growth of deposits outpaced the growth of loans by 18 p.p., and as of July 1, 2025, the difference between loans and deposits narrowed to 9 trillion UZS.

The downward trend in loans and deposits concentration persisted. As of July 1, 2025, the HHI decreased to 898 for bank loans and to 626 for deposits, remaining in the low concentration group. In this case, the HHI for the outstanding loans to legal entities stood at 1,222, falling by 72 units compared to July 1, 2024.

Figure 34. Bank-by-Bank Annual Growth Rates of Loans and Deposits (as of July 1, 2025)
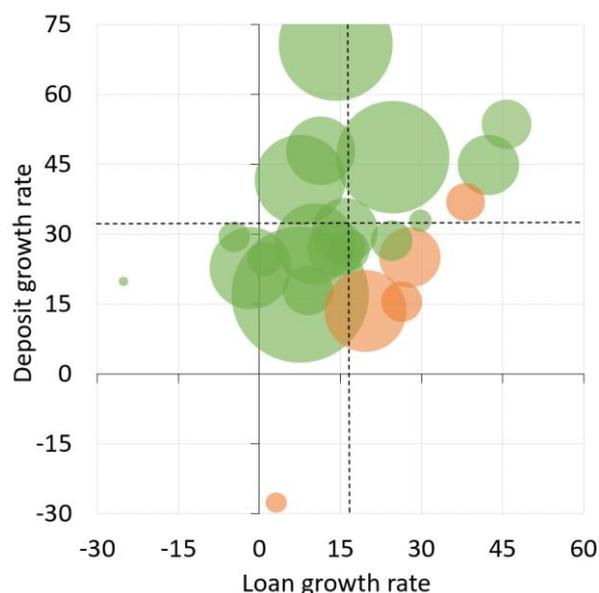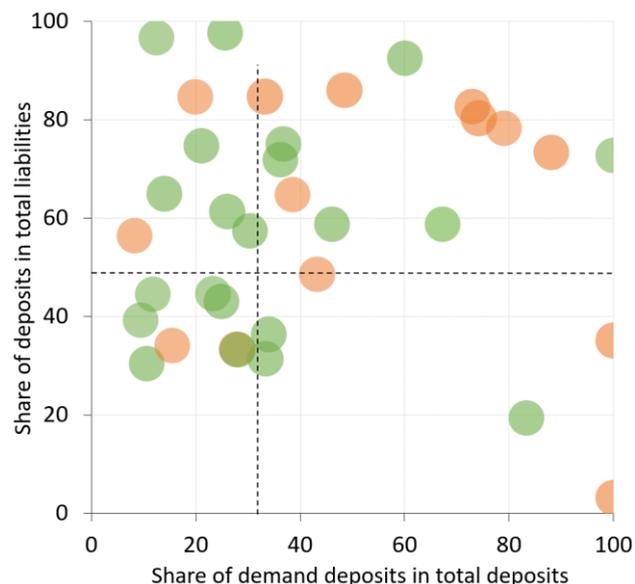
Figure 35. Bank-by-Bank Share of Deposits in Total Liabilities and Share of Demand Deposits in Total Deposits (as of July 1, 2025)

Source: CBU staff calculations.

Note: In the left graph, the color green on the chart represents banks with a faster growth rate of deposits compared to loans, while light red indicates banks with a lower growth rate of loans. The bubble size represents the share of bank's assets in all banks' assets.

In the right graph, the color green on the chart indicates banks where the share of demand deposits in total deposits decreased compared to the same period in 2024. Light red, on the contrary, represents banks where the share of demand deposits in total deposits increased compared to the same period in 2024. The dashed straight lines represent indicators for the banking system as of July 1, 2025.

The share of demand deposits in the total deposits of the banking system has decreased. As of July 1, 2025, demand deposits accounted for 32% of total deposits, representing a decline of 2 p.p. compared to the corresponding period of 2024. Additionally, in D-SIBs, the growth rate of deposits is exceeding the loan growth rate.

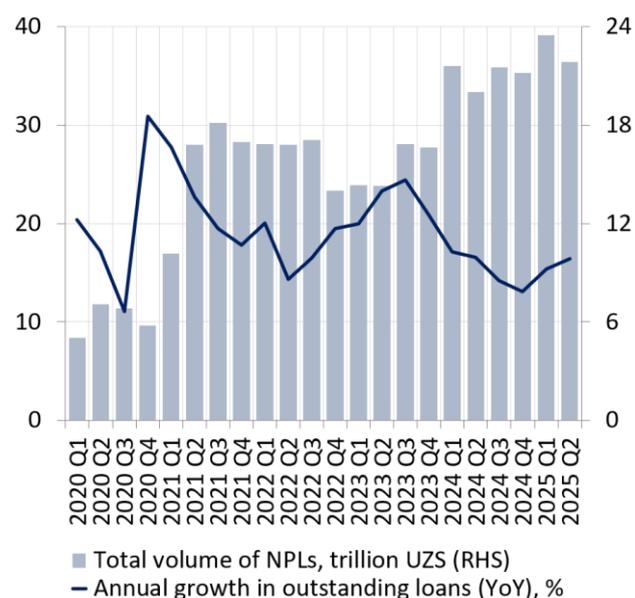**Figure 36. Total volume of NPL and Outstanding Loans**

- Total volume of NPLs, trillion UZS (RHS)
- Annual growth in outstanding loans (YoY), %

Figure 37. Share of NPLs in Total Loans, %

D-SIBs — Other

Source: CBU.

NPLs are growing at a slower rate relative to outstanding loans. The volume of NPLs amounted to 21.9 trillion UZS as of July 1, 2025, reflecting a 9% rise compared to the corresponding period of 2024. In turn, the growth of total outstanding loans contributed to a decline in the NPL ratio of the banking system to 3.8%. Furthermore, due to the stability of the exchange rate in recent years, its impact on NPLs has been negligible. In addition, the share of NPLs in the loan portfolios of Uzbek banks is close to the median in certain CCA countries.

D-SIBs exhibit higher credit risk compared to other banks. As of July 1, 2025, the share of NPLs in total loans constituted 4% in D-SIBs, while it was 3.3% in other banks. The share of NPLs in the loan portfolio of D-SIBs showed no change on an annual basis, while in other banks it contracted by 0.7 p.p.

Figure 38. NPL Ratio in CCA Countries*, %
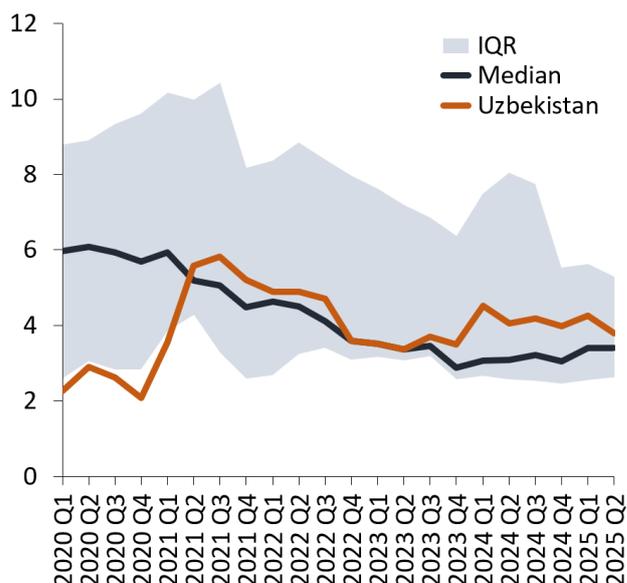
Figure 39. NPL Composition, %
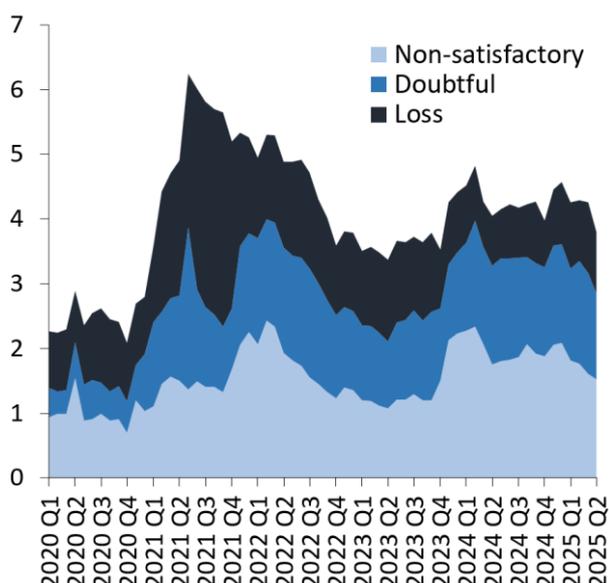
Source: CBU.

Note: *Armenia, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan, and from Q4 2021 Azerbaijan are taken into account.

The main share of NPLs consists of loans with a relatively low probability of losses. By the end of H1 2025, 40% of NPLs were classified as "non-satisfactory", while 35% were "doubtful" loans. Within NPLs, "non-satisfactory" loans are considered to have a relatively higher level of repayment reliability.

Figure 40. NPLs and Provisions, %

Figure 41. Decomposition of Annual Change in NPL Ratio, %

Source: CBU.

The banking system's resilience to loan losses has strengthened. By the end of H1 2025, the NPL coverage ratio stood at 49%, an increase of 19 p.p. compared to the corresponding period of 2024. The NPLs net of provisions to CAR declined from 12% to 8%. In addition, exchange rate changes had a positive effect on the NPL ratio.
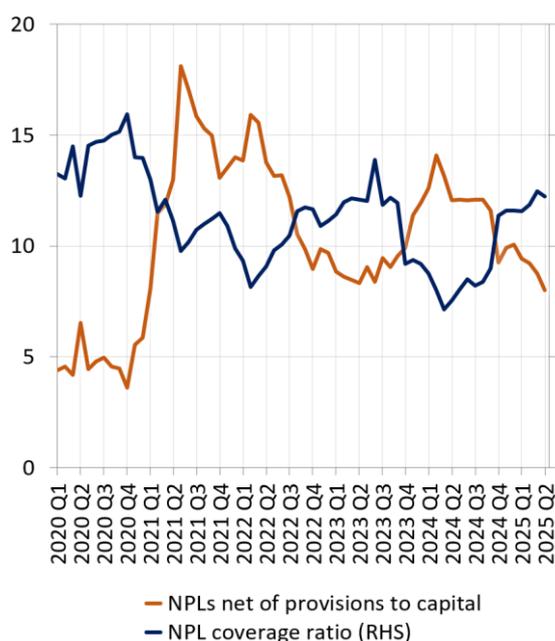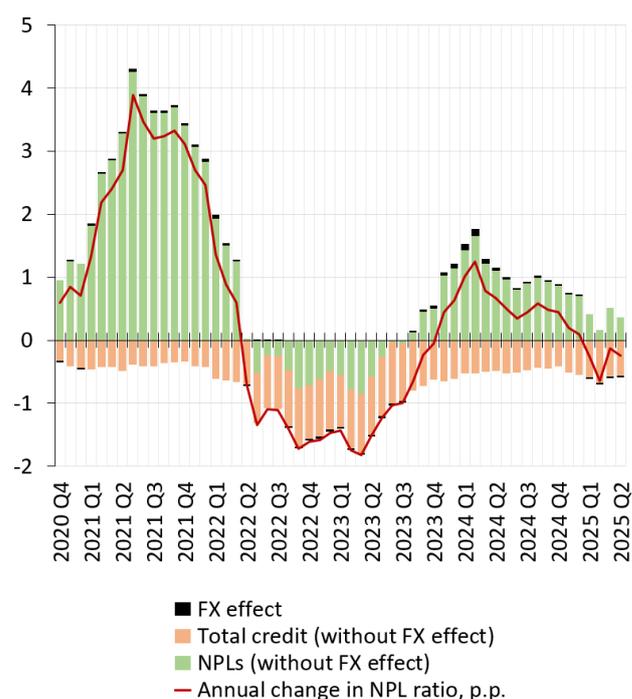
Box 2. Systemic Risk Survey

In July 2025, the CBU conducted the latest survey[41] among 36 banks (respondents) with the aim of identifying possible systemic risks in Uzbekistan's financial system and assess their impact.

According to the survey results, geopolitical risks were identified by the respondents as the main risk. Also, exchange rate volatility, rising household debt burden, elevated inflation and cyberattacks were assessed as the top risks for the financial system.

Figure 42. Principal Systemic Risks in Uzbekistan's Financial Sector

Liquidity risk
Large borrower defaults
Cyber attacks
High inflation
Falling housing prices · Energy instability · Climate risk · Asset concentration
Geopolitical risks
Compliance risk
Refinancing risk · Competitive risk
Household debt burden
Operational risk · Lower car prices
Financial infrastructure disruption
Exchange rate
Credit risk
Economic decline

Source: CBU Survey.

Note: The font size of systemic risks reflects their level of importance, determined by a weighting system of one five.

Of the top five systemic risks identified by each respondent, calculated by weight, 61% relate to external geopolitical risks, 42% to sharp exchange rate volatility, 33% to rising household debt burden, 30% to accelerating inflation, and 26% to risks associated with cyberattacks[42].

At the same time, respondents also listed credit risk, economic slowdown, large borrower defaults, liquidity risk, and climate change risks as factors that could adversely affect Uzbekistan's financial system.

---

[41] The sample of Systemic Risk Survey is provided in the Financial Stability Report for 2023.

[42] In this question, each bank identifies five systemic risks. Importantly, the proportion of respondents citing a particular risk as affecting the financial system does not necessarily correspond to the perceived severity of that risk as a systemic risk. Furthermore, the systemic risks identified by banks are not mutually exclusive, meaning a single bank can designate multiple risks. Consequently, the combined percentage of risks mentioned by respondents does not equal 100%.

According to the results of the survey conducted in July 2025, the share of respondents who assessed the probability of systemic risks materializing as low in the short-term stood at 39%, decreasing by 17 p.p. compared to the result of the survey in January 2025. Also, 39% of the respondents noted the probability of risk occurrence as medium, an increase of 19 p.p. This, in turn, indicates that in the short-term, respondents' expectations regarding the likelihood of systemic risks occurring have risen.

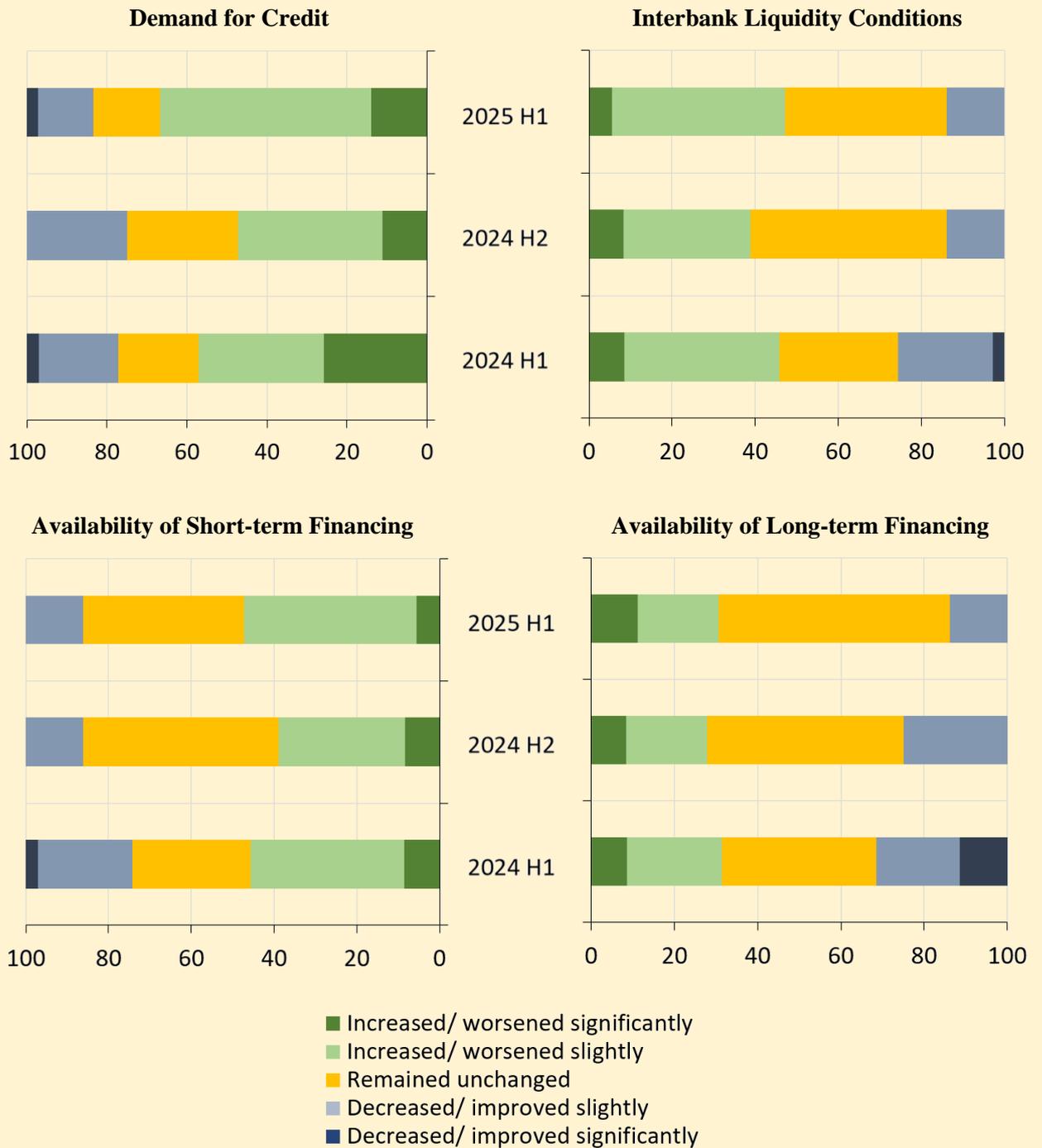**Figure 43. Probability of Materialization of Systemic Risks, %**
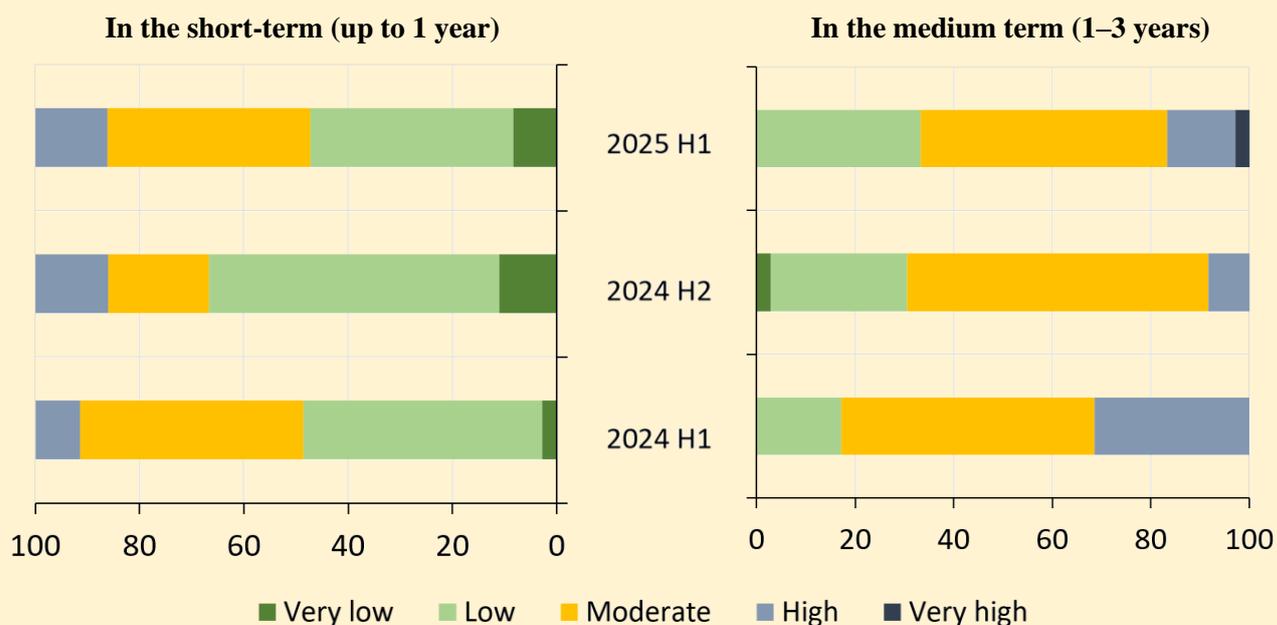
Source: CBU Survey.

In the medium term, the share of respondents rating the probability of systemic risks materializing as low continued to increase, reaching 33%. Meanwhile, 50% of respondents noted the likelihood of risk occurrence as medium, a contraction of 11 p.p. compared to the results of the survey conducted in January 2025. In addition, 14% of respondents assessed the medium-term likelihood of systemic risks materializing as high.

According to the results of the survey on factors affecting financial stability, 67% of respondents reported an increase in credit demand, representing a 10 p.p. rise compared to the results of the survey conducted in the corresponding period of 2024.

Furthermore, 42% of respondents noted an improvement in interbank liquidity conditions, which was 5 p.p. higher relative to the results of the survey conducted in the same period of 2024.

Figure 44. Changes in Factors Affecting Financial Stability Over the Past Six Months, %

Demand for Credit

Interbank Liquidity Conditions

Availability of Short-term Financing

Availability of Long-term Financing

Legend:
- ■ Increased/ worsened significantly
- ■ Increased/ worsened slightly
- ■ Remained unchanged
- ■ Decreased/ improved slightly
- ■ Decreased/ improved significantly

Source: CBU Survey.

In addition, 14% of the respondents cited a deterioration in both short- and long-term financing sources. Availability of short-term financing sources declined by 12 p.p., meanwhile availability of long-term financing fell by 18 p.p. compared to the same period in 2024.

Box 3. Contingent Claims Analysis

The geopolitical tensions observed globally, along with the significant importance of the banking system within Uzbekistan's financial sector, are increasing the relevance of assessing banks' resilience to systemic risks.

The analysis based on the statistical data from banks' balance sheets is retrospective[43] and may fail to fully capture systemic risks arising under economic shocks. The Systemic Contingent Claims Analysis, which utilizes both balance sheet and market data of banks, enables the assessment of each bank's PD, expected losses, and the evaluation of overall vulnerabilities across the banking system using these loss estimates (Appendix 1).

The Systemic Contingent Claims Analysis model accounts not only the aggregate of risks of individual banks, but also additional systemic risks that may arise from interconnectedness between them. As a result, the risk level of the entire financial system may exceed the sum of individual risks. This model combines banks' individual expected losses on assets. In this context, using the statistical Extreme Value Theory (EVT)[44] method, losses in the joint probability of simultaneous crisis of several banks in financial stress conditions are determined.

According to the results of the Contingent Claims Analysis model applied to the banking system of Uzbekistan, a shortening of DtD for the three selected D-SIBs is reflected in the decrease in banks' PD. In particular, the simple arithmetic mean of the model-estimated PD for analyzed banks stood at 34% at the end of H1 2025, representing a reduction of 41 p.p. compared to July 1, 2024.

Among the analyzed D-SIBs, the positive DtD, determined based on the estimated value of assets and the established distress barrier, resulted in PD falling below 50%. Due to the significant reduction in the PD for selected D-SIBs, total expected losses in these banks decreased by 80% at the end of H1 2025 compared to the corresponding period of 2024.

In H1 2025, conditions related to DtD and PD of evaluated D-SIBs improved. Additionally, expected losses and associated risk of expected shortfall in the selected D-SIBs decreased. As of July 1, 2025, the share of expected shortfall in the banking system's assets decreased by 13 p.p. compared to the corresponding period in 2024. By the end of H1 2025, the share of expected shortfall in total banking system assets at a 5% probability level amounted to 4%.

---

[43] Retrospective analysis is a method of deriving conclusions by evaluating past data, events or processes.

[44] Peon, P. (2020). Statistical Extreme Value Theory. Application to basins of the Basque Country.
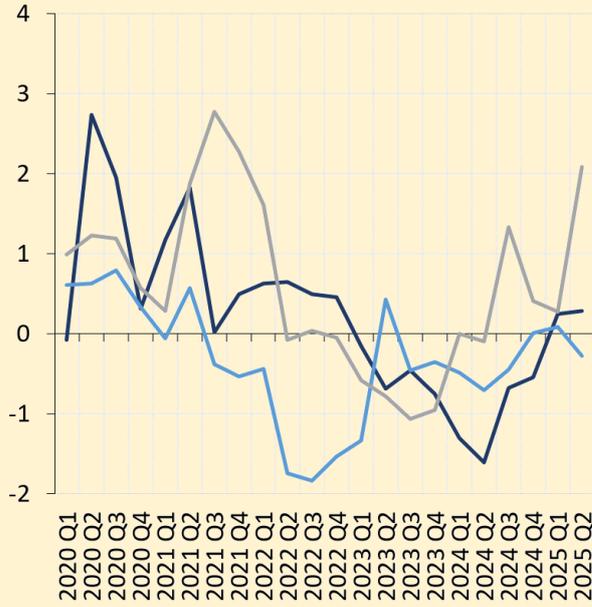
Figure 45. DtD, number of SD
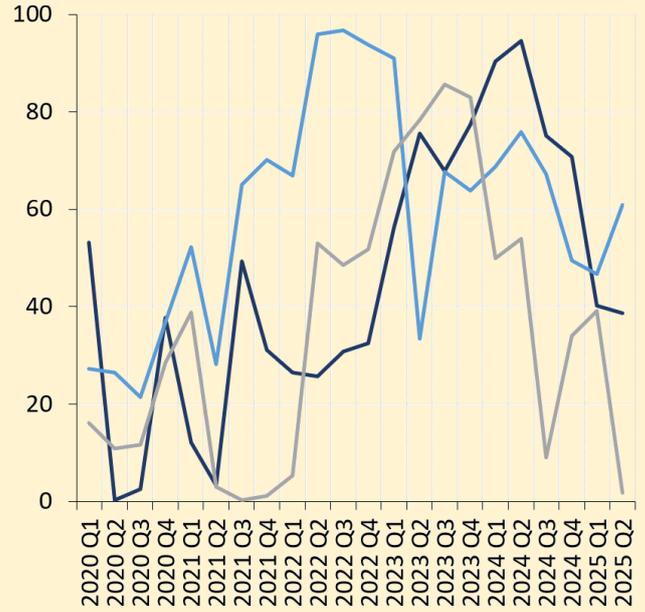

Figure 46. PD, %

Figure 47. Expected Loss of Bank Assets, natural logarithm value
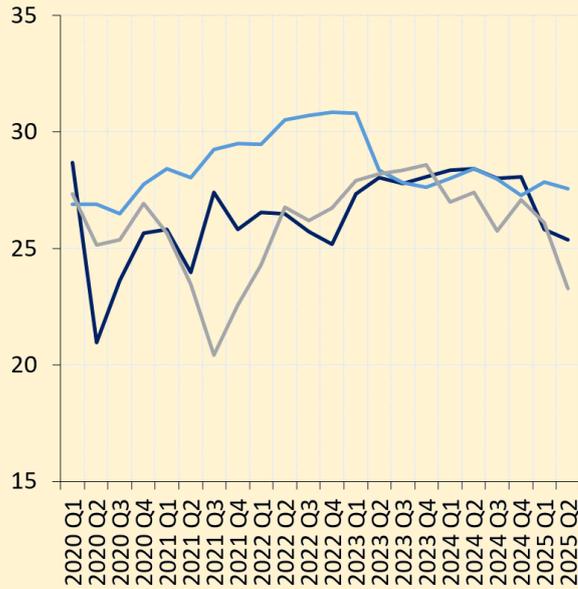
Figure 48. Share of Expected Shortfall in Banking System Assets, %
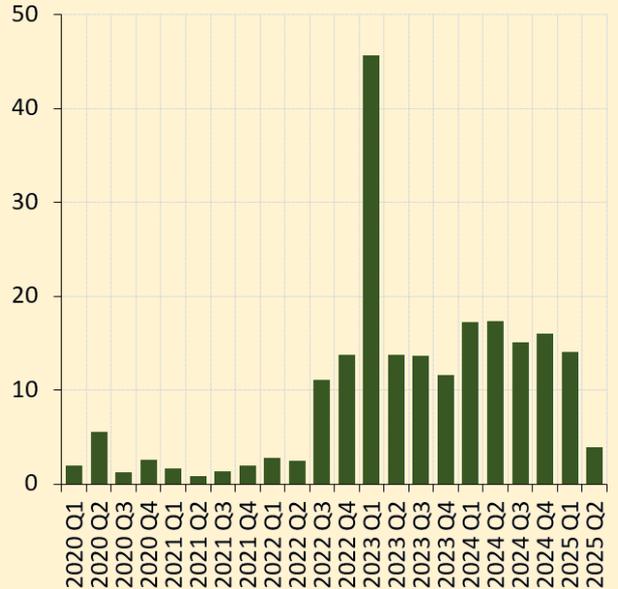
Source: CBU staff calculations.

Note: DtD measures the number of SD by which the estimated values of assets exceed the distress barrier. DtD value of 0 corresponds to PD of 50%. Also, a positive value indicates a PD below 50%, while a negative value denotes a PD above 50%.

Due to the observed high concentration of expected losses of assets in certain banks among selected D-SIBs, the loss amounts are standardized and presented as the natural logarithm of UZS.

2.2. Non-bank Financial Sector

The non-bank financial sector[45] constitutes a small share of financial system. In H1 2025, the share of non-bank financial sector assets in GDP stood at 1.8%, increasing by 0.3 p.p. compared to the same period in 2024. Despite a decline in the profitability of the insurance sector, which accounts for the largest share of the non-bank financial sector, the operational efficiency of insurance companies and the insurance penetration continued to improve. In addition, although the growth of microfinance organizations' assets led to a decrease in CAR, it remained above the minimum requirement. Furthermore, positive changes have been observed in the profitability of mortgage refinancing company.

Figure 49. Non-bank Financial Sector Assets, trillion UZS

Non-bank financial sector assets, trillion UZS
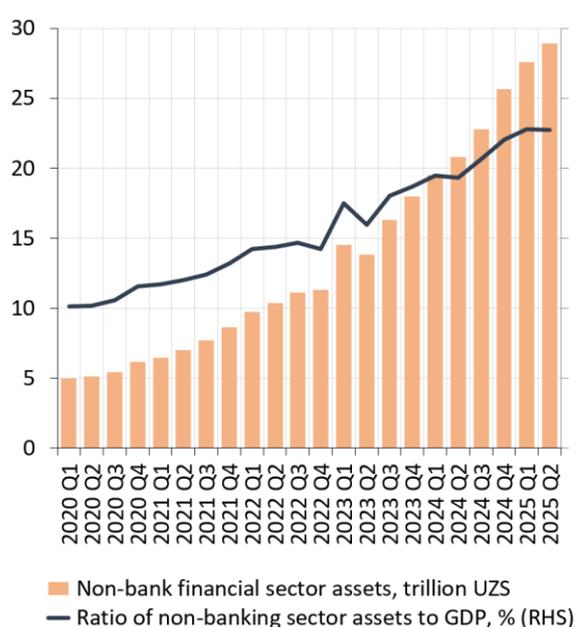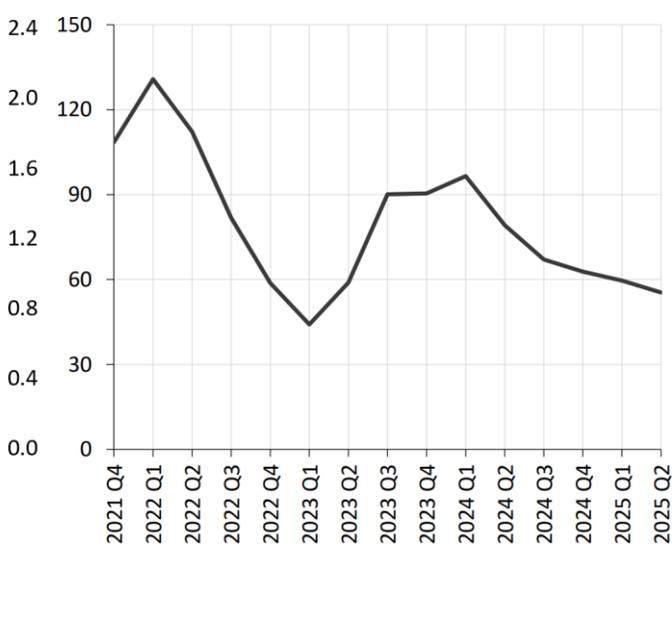Ratio of non-banking sector assets to GDP, % (RHS)

Figure 50. Annual Growth Rates of Stock of Loans of Non-bank Credit Organizations, %

Sources: National Statistics Committee, National Agency of Prospective Projects and Unified Corporate Information Portal and CBU staff calculations.

The growth dynamics of non-bank financial sector assets is maintained. As of July 1, 2025, non-bank financial sector assets amounted to 28.9 trillion UZS, marking a 39% rise compared to the corresponding period of 2024. Between July 1, 2024 and July 1, 2025, microfinance organizations within non-bank financial sector experienced an annual asset growth of 62%. Also, as of July 1, 2025, 44% of non-bank financial sector assets were held by insurance organizations.

The pace of lending by non-bank credit organizations[46] is slowing down. As of July 1, 2025, the annual growth rate of non-bank credit organizations loan portfolio contracted by 24 p.p. compared to the corresponding period of 2024, reaching 55%. In addition, at the end of H1 2025, the total volume of loans extended by non-bank credit organizations amounted to 14 trillion UZS, with 65% of these loans accounted for by pawnshops and microfinance organizations.

---

[45] In analyzing the non-bank financial sector, non-bank credit organizations and insurance companies were considered.

[46] Non-bank credit organizations include microfinance organizations, pawnshops, and mortgage refinancing organizations.
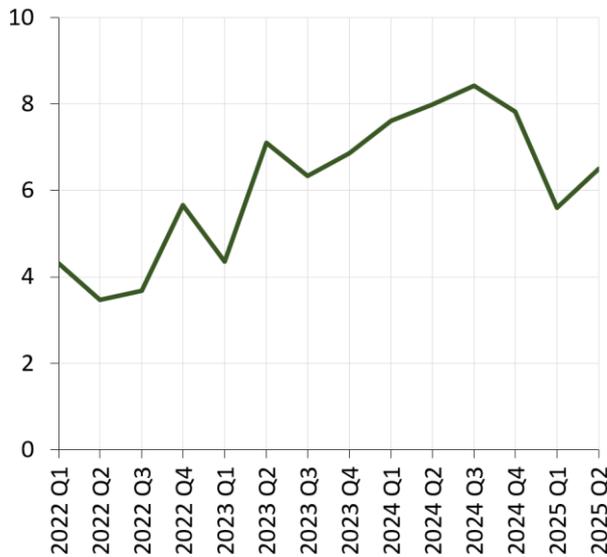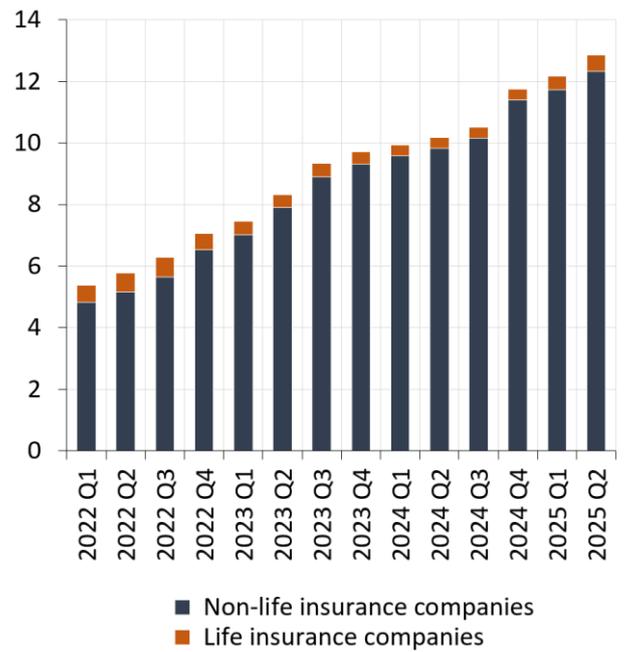
Figure 51. ROA of Insurance Companies, %

Figure 52. Assets of Insurance Companies, trillion UZS

Non-life insurance companies
Life insurance companies

Sources: Unified Corporate Information Portal and CBU staff calculations.

Note: ROA of the insurance sector is determined by aggregating the balance sheet data of all insurance companies.

A downward trend was observed in the profitability of insurance companies. As of July 1, 2025, the ROA of insurance companies[47] was 6.5%. By the end of H1 2025, due to a 26% annual rise in insurance companies' assets, PBT fell by 5.8%. As a result, the ROA reduced by 1.5 p.p. compared to the corresponding period in 2024.

Assets of insurance companies are growing steadily. As of July 1, 2025, the total assets of insurance organizations rose by 2.7 trillion UZS compared to the corresponding period in 2024. The main driver of the increase in total insurance sector assets was the annual growth of general insurance companies' assets by 2.5 trillion UZS. At the end of H1 2025, the assets of general insurance companies amounted to 12.3 trillion UZS, constituting 96% of the total assets of insurance organizations.

---

[47] ROA is calculated by dividing annual PBT by average total assets.

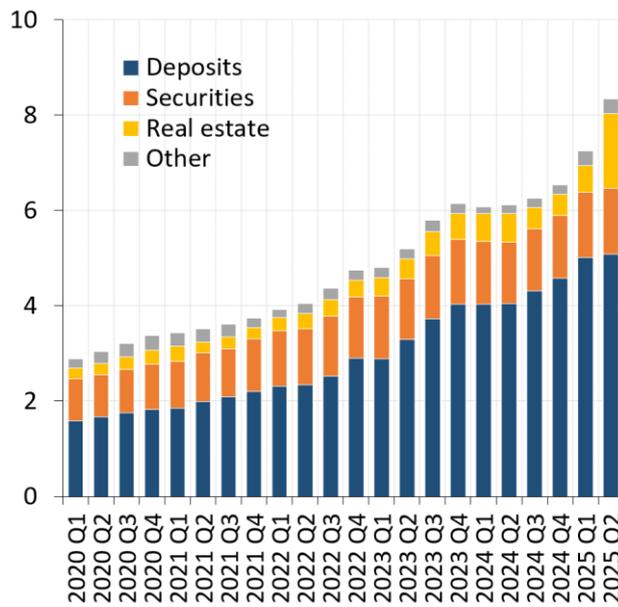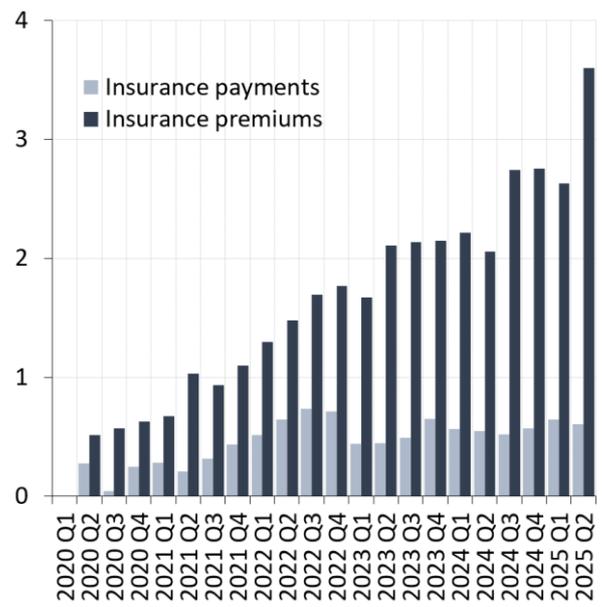**Figure 53. Investments of Insurance Companies, trillion UZS**

Figure 54. Quarterly Insurance Payments and Premiums, trillion UZS

Source: National Agency of Prospective Projects.

Insurance companies have intensified investment in the real estate market. As of July 1, 2025, the total investment volume of insurance companies amounted to 8.3 trillion UZS, an increase of 36% compared to the same period in 2024[48]. In particular, the volumes of deposits and real estate investments grew by 25% and 160%, respectively. Deposits retain a majority share in the investment portfolio with 61%. In addition, the volume of insurance companies' investments in real estate reached 1.6 trillion UZS.

The rise in demand for insurance services was reflected in the growth of insurance premiums. In H1 2025, insurance premiums[49] amounted to 6.2 trillion UZS, a 46% increase compared to the corresponding period of 2024. Also, insurance payments[50] increased by 12%, reaching 1.2 trillion UZS.

---

[48] The National Agency of Perspective Projects of the Republic of Uzbekistan. (2025). Insurance Market Indicators of the Republic of Uzbekistan for H1 2025.

[49] An insurance premium is the amount a policyholder pays an insurer according to the terms specified in the insurance contract and can be paid in national or foreign currency.

[50] An insurance payment refers to the money paid to the policyholder or beneficiary in the event of an insurance claim. It is typically within the sum insured for each insured person as specified in the insurance contract.

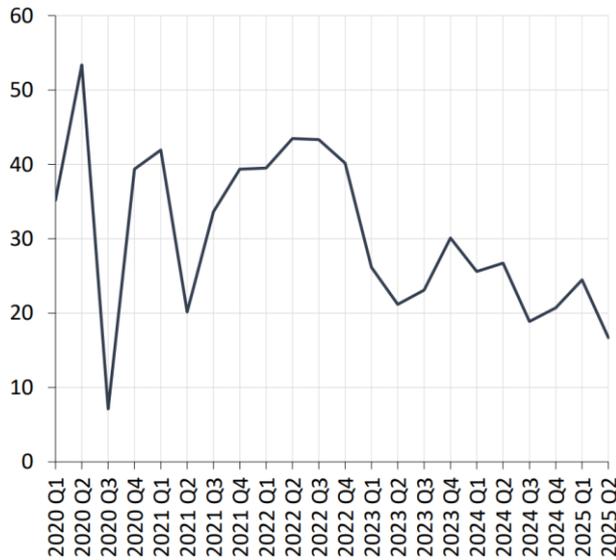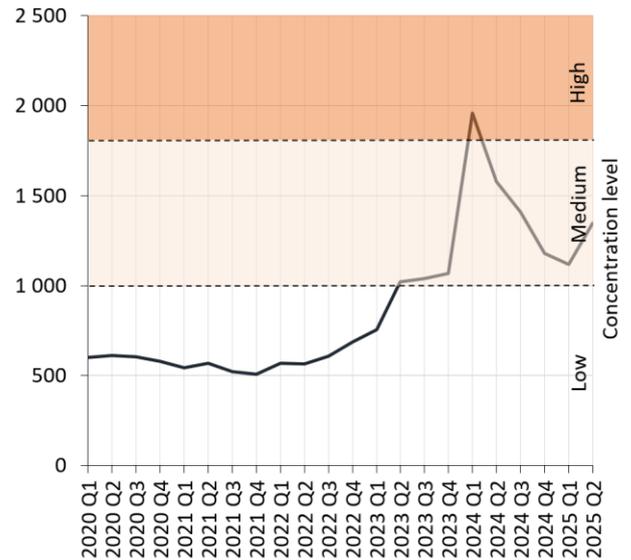**Figure 55. Insurance Payments-to-Insurance Premiums Ratio, %**

Figure 56. Insurance Premiums Concentration, HHI[51]

Sources: National Agency of Prospective Projects and CBU staff calculations.

Operational efficiency of insurance companies is improving. In H1 2025, the insurance payments-to-insurance premiums ratio stood at 20%, falling by 6 p.p. compared to 2024. The annual growth rate of insurance payments slowed by 34 p.p. in H1 2025 relative to the annual growth of insurance premiums. The improvement in operational efficiency of insurance companies may have a positive impact on the profitability of insurance organizations in the future.

The concentration risk of insurance premiums remains at a medium level. At the end of H1 2025, the HHI for insurance premiums was 1,348, a decrease of 15% compared to the corresponding period of 2024. Although the number of insurance companies contracted to 34[52], the concentration level of insurance premiums remained in the medium range.

Rising insurance density and penetration in Uzbekistan indicates a strengthening of the insurance market's financial stability and resilience to climate-related risks. At the end of H1 2025, the insurance penetration stood at 7.7 per mille, rising by 1.3 per mille compared to the corresponding period in 2024. Insurance density increased from 18 USD to 24 USD. Despite the rise in insurance density in Uzbekistan, it remains low compared to peer countries with similar level of economic development.

---

[51] The HHI categorizes industries into low concentration (HHI below 1000), medium concentration (HHI between 1000 and 1800), and high concentration (HHI above 1800).

[52] The National Agency of Prospective Projects of the Republic of Uzbekistan. (2025). Insurance Market Indicators of the Republic of Uzbekistan for H1 2025.

Figure 57. Insurance Penetration and Density in Uzbekistan

Insurance density, USD — Insurance penetration, ‰ (RHS)
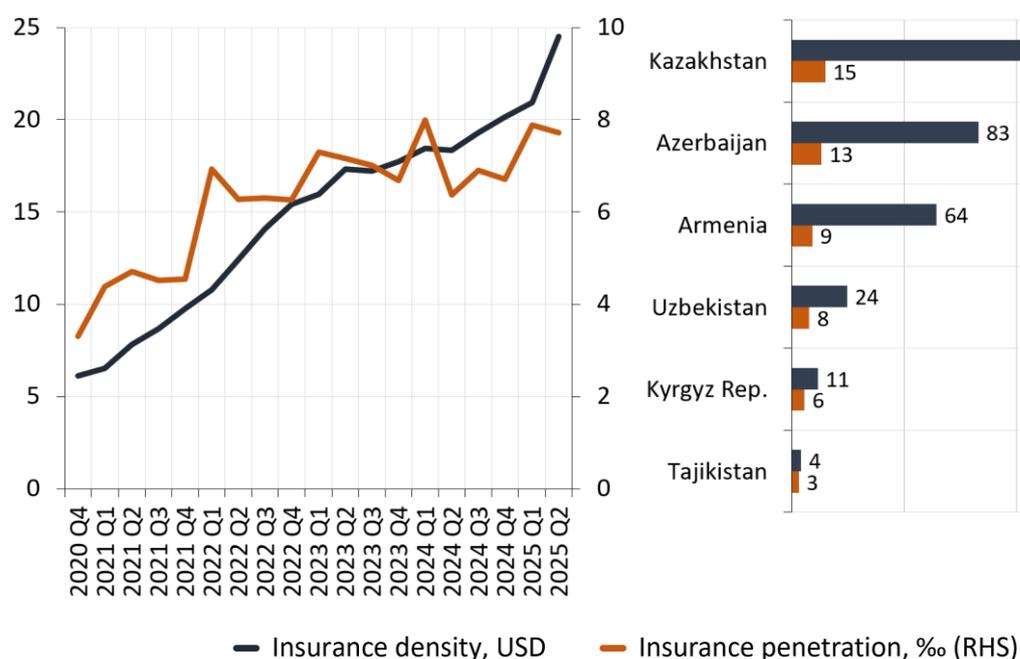
Figure 58. Insurance Penetration and Density in Selected Countries (as of July 1, 2025)
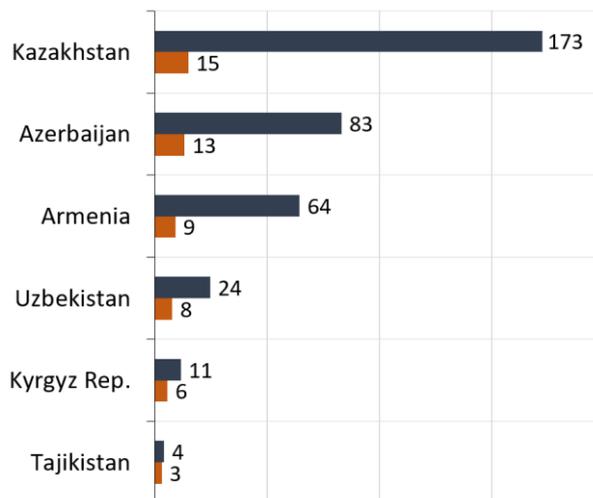
Sources: National authorities, National Agency of Prospective Projects, National Statistics Committee and CBU staff calculations.

Note: Per mille (‰) represents one-thousandth of a number or one-tenth of a percent.

Insurance density is calculated by dividing annual total insurance premiums by the population.

Insurance penetration is calculated by dividing the total insurance premiums by the nominal GDP. The values of insurance premiums and the nominal GDP in the corresponding periods are used for this purpose.

A decline has been observed in the solvency of microfinance organizations. As of July 1, 2025, the CAR of microfinance organizations[53] was 29%, falling by 5 p.p. compared to the corresponding period in 2024. Although the total equity of microfinance organizations expanded by 38% on annual basis, this growth was 24 p.p.[54] slower than the growth of their assets.

---

[53] The CAR of microfinance organization is calculated by the ratio of total equity of microfinance organization to total assets.

[54] The Central Bank of the Republic of Uzbekistan. (2025). Indicators of non-bank credit organizations.

Figure 59. CAR of Microfinance Organizations, %
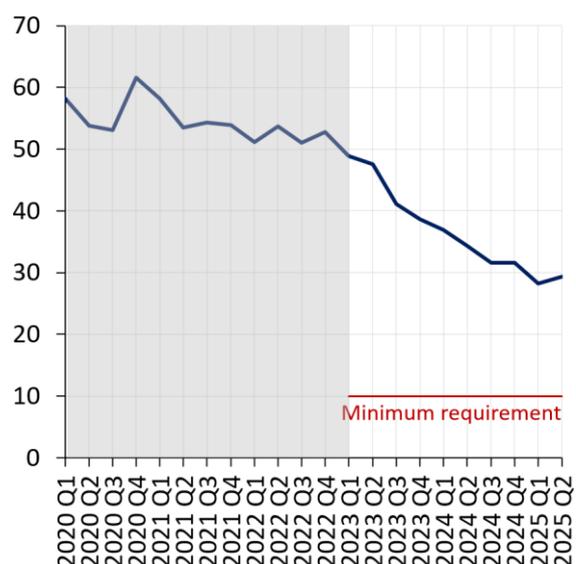
Figure 60. ROA of Mortgage Refinancing Company, %
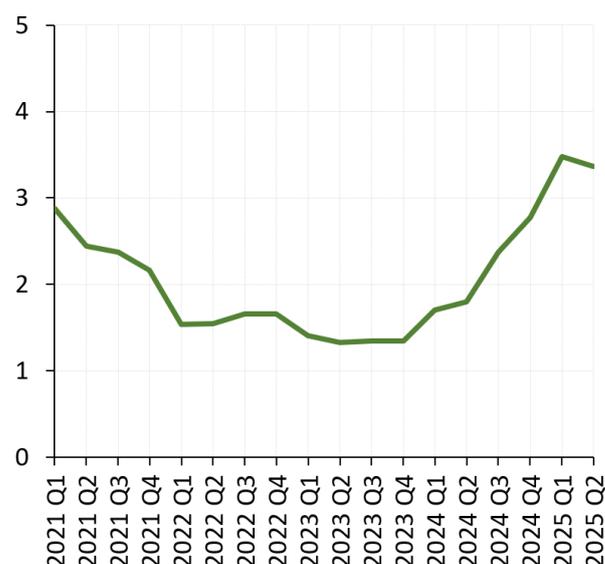
Sources: Mortgage Refinancing Company of Uzbekistan and CBU staff calculations.

Note: As of April 14, 2023, a minimum CAR requirement for microfinance organizations has been established.

The profitability of the mortgage refinancing company exhibited an upward trend. In H1 2025, the net profit of the mortgage refinancing company surged by 185% year-on-year, reaching 91.2 billion UZS[55]. Due to the high growth rate in the income of the mortgage refinancing company, the ROA stood at 3.4% at the end of H1 2025, increasing by 1.6 p.p. compared to July 1, 2024.

---

[55] Mortgage refinancing company of Uzbekistan. (2025). Financial reports.

III. Non-financial Sector

3.1. Household Sector

Due to the application of borrower-based MPP tools, along with the impact of financial conditions, household debt burden has improved. Tightening of the DSTI cap for all individual loans was reflected in the reduction in the overall debt burden of individuals with bank loans.

The coverage of the non-bank sector is expanding in terms of the number of retail loan borrowers. As of July 1, 2025, 81% of total indebted individuals had obtained loans from banks, while 27% from non-bank credit organizations. Of this, 19% of the bank borrowers also had debt outside the banking sector.

The share of non-bank liabilities in the total debt obligations of households remains low. 93% of total household liabilities consist of bank loans, while the shares of non-bank credit and non-financial organizations were 4% and 3%, respectively. Although the number of retail borrowers in the non-bank sector has increased, the relatively small volume of outstanding debt to this sector indicates that the probability of systemic risks occurring in this sector remains low.

The share of bank borrowers with multiple loan obligations is increasing. In H1 2025, 47% of bank borrowers had more than one debt from the bank and non-bank sectors, representing a growth of 6 p.p. compared to the corresponding period of 2024.

The overall debt burden of individuals with loans from banks has declined. The reduction in household debt burden was driven by the tightening of the debt burden limit to 50% for all types of loans starting from 2025[56]. In particular, in H1 2025, bank borrowers with DSTI ratio of 50% or below, taking into account both bank and non-bank liabilities, accounted for 78% of total volume of loans extended to individuals. This share jumped by 18 p.p. compared to the corresponding period in 2024. In addition, the total DSTI ratio of individuals[57] reduced from 36% in H2 2024 to 33% in H1 2025.

Mortgage and car loans, which have relatively higher household DSTI ratios, exhibited positive developments. During H1 2025, the average DSTI ratio for mortgage borrowers of banks, including all debts, stood at 50%, falling by 19 p.p. compared to H1 2024. Of the total mortgage volume, 31% corresponded to borrowers with DSTI ratio exceeding 50%, a decrease of 28 p.p. Furthermore, in H1 2025, the average DSTI ratio of individuals who obtained car loans from banks dropped from 68% in H1 2024 to 38%.

---

[56] O'zbekiston Respublikasi Markaziy banki boshqaruvining 2024 yil 26 yanvardagi "Qarz oluvchi jismoniy shaxslarning qarz yukini tartibga solish to'g'risidagi nizomga o'zgartirish va qo'shimchalar kiritish to'g'risida"gi 42/16-sonli qarori.

[57] The DSTI methodology is presented in the Debt Service Ratio Analysis for Individuals of CBU.

Figure 61. Distribution by Number of Borrowers* (as of July 1, 2025)
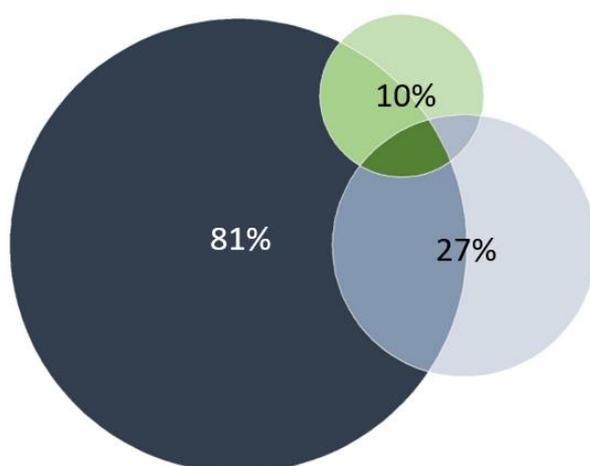
Figure 62. Distribution by Loan Volume** (as of July 1, 2025)

81%   10%   27%

93%   3%   4%
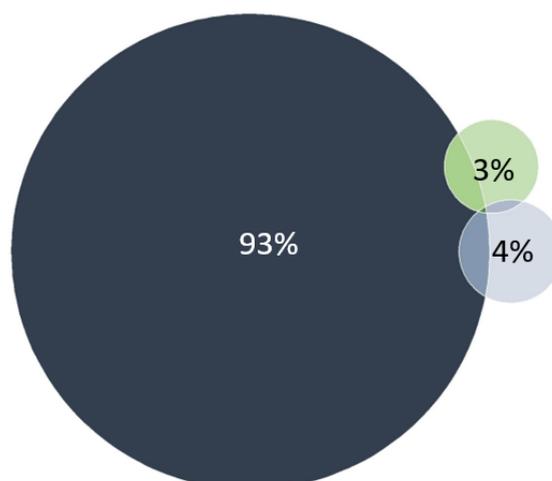
- ■ Banks
- ■ Non-bank credit institutions
- ■ Non-financial institutions

Figure 63. Indebtedness of Individuals, %

- ■ Multiple credit exposures
- ■ Single credit exposure
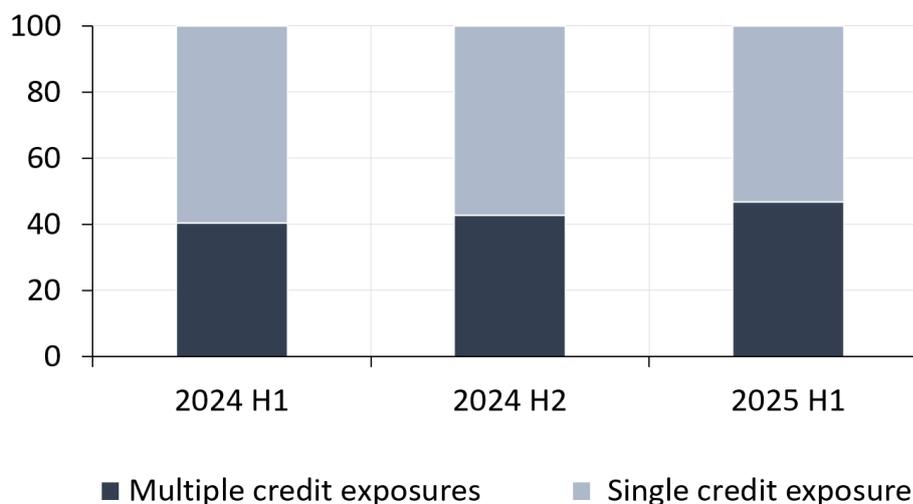
Source: CBU staff calculations.

Note: *The size of the circles in the diagram is determined proportionally to the number of individuals with loan or debt obligations. The Personal Identification Number of an Individual was used to determine the number of individuals with loans or debts. The calculations were performed based on the number of borrowers, multiple loan or debt contracts held by a single borrower from banks and non-bank organizations were disregarded.

**The distribution of loans and debts to individuals by banks, non-bank financial, and non-financial organizations is presented by respective share of funds allocated to the households by these organizations. The color of the intersections of circles reflects the predominance of the amounts issued by the organizations. The area of the intersections is determined to proportionally to the volume of funds allocated by the organization, indicated by the color of the intersection to the individuals with multiple loans and debt obligations.

Figure 64. Distribution of DSTI Ratio of Bank Borrowers Including Total Non-bank Liabilities
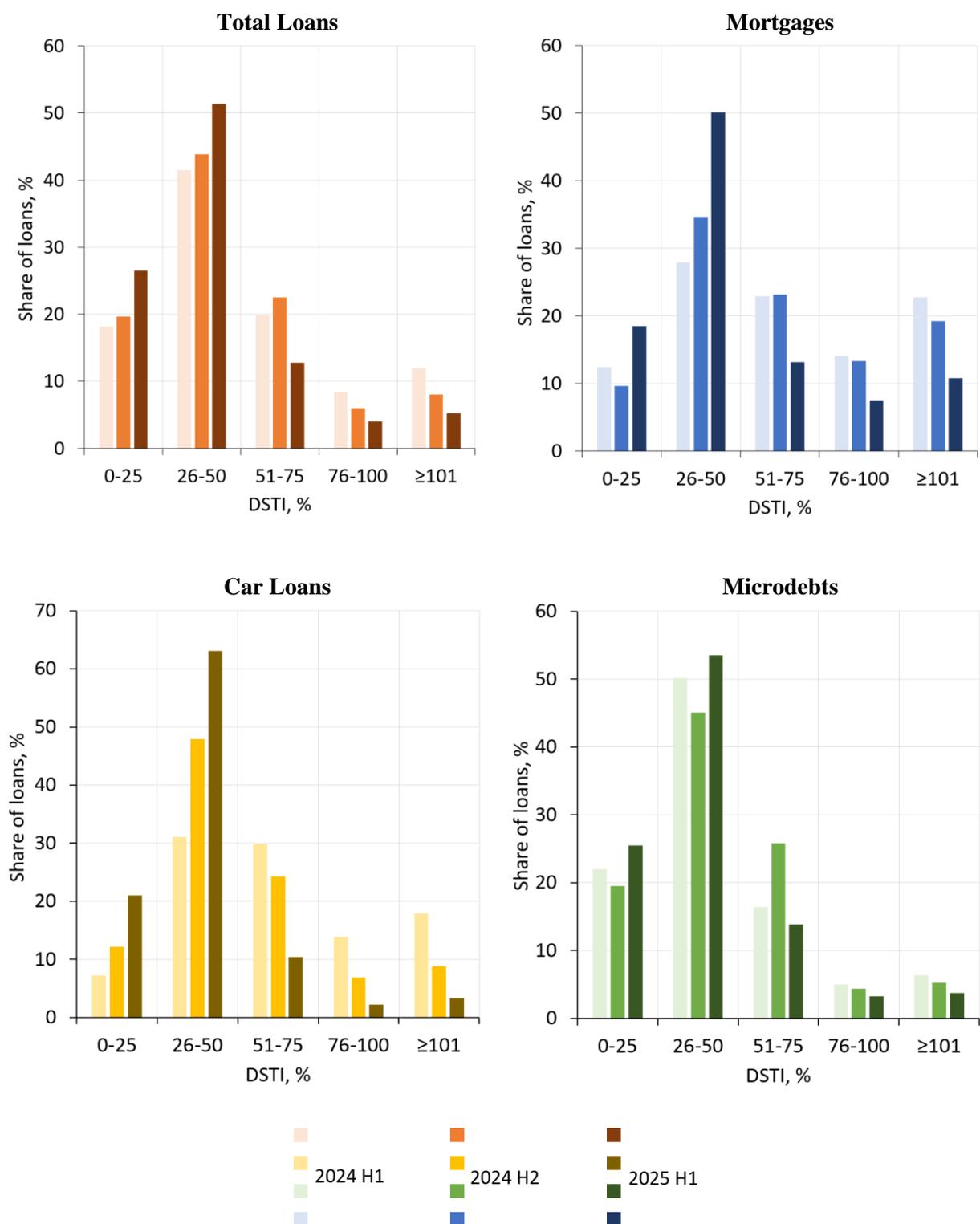
Source: CBU staff calculations.

Note: The DSTI ratio is calculated for borrowers with income whose monthly income is not less than the average household's minimum monthly living expenses. To calculate the DSTI ratio for individuals who obtained loans from banks during the analysis period, all outstanding obligations under loan and debt contracts concluded with banks, non-bank, and non-financial organizations are taken into account.

Figure 65. Average DSTI[58] Ratio for Bank Borrowers Including Total Non-bank Liabilities
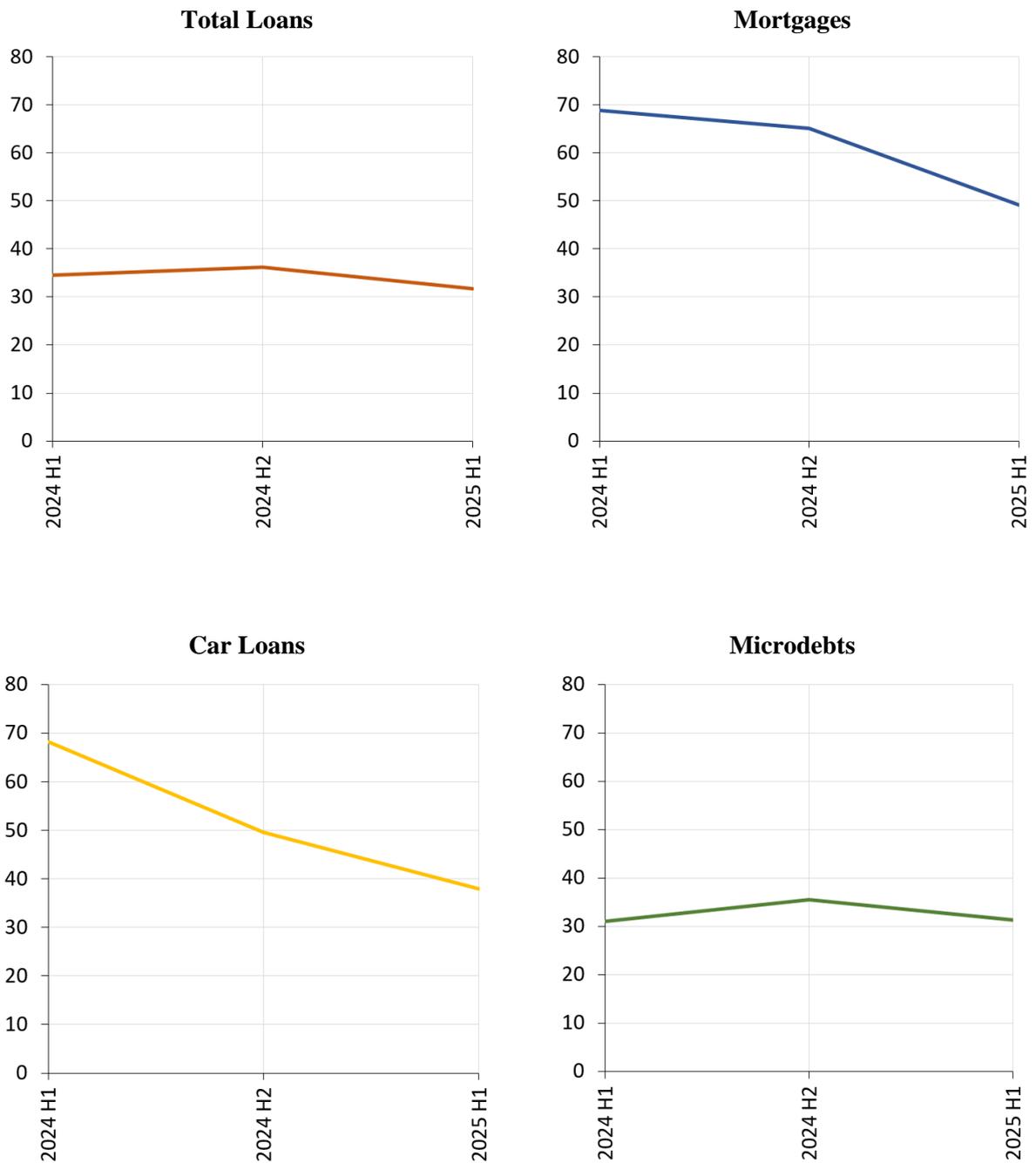
Source: CBU staff calculations.

Note: The average DSTI ratio is determined by calculating the arithmetic mean of the ratio of total monthly payment of the existing debt obligations of individuals to their monthly income.

---

[58] In calculating the DSTI ratio for individuals, borrowers with income whose monthly income is not less than the minimum monthly living expenses of the average household are included. In H1 2025, 45% of all bank borrowers were included in determining the household debt burden. The coverage rate was 84% for mortgages, 43% for car loans, and 48% for microdebts.

LTV ratio for mortgages remains high. In H1 2025, the weighted average LTV ratio for mortgages issued by banks to households stood at 78%, remaining unchanged compared to H1 2024. Also, in H1 2025, mortgages with LTV ratio above 80% constituted 38% of total mortgage portfolio.

The effect of the indirect limits[59] established for car loans is manifesting with a certain lag. In H1 2025, the weighted average LTV ratio for car loans issued by banks was 77%. 74% of issued car loans had LTV ratio above 75%. Since the introduction of indirect LTV cap for car loans, the share of car loans with LTV ratio exceeding 75% in the portfolio of car loans extended up to June 2025 amounted to 77%. This indicator declined by 5 p.p. compared to car loans issued between November 2021 and August 2023. As of July 1, 2025, the share of loans with LTV ratio above 75% in the outstanding car loan portfolio fell to 12% from 54% on September 1, 2023. The allocation of car loans with higher LTV ratios, driven by competition in credit market, can be explained by the expectation that LTV ratios and associated risk weights will decline as outstanding loan balances decrease over time. Direct 75% LTV cap[60], implemented from July 24, 2025, aims to improve the collateralization of car loans.

---

[59] O'zbekiston Respublikasi Markaziy banki boshqaruvining 2023 yil 6 iyundagi "Tijorat banklari kapitalining monandligiga qo'yiladigan talablar to'g'risidagi nizomga o'zgartirishlar va qo'shimcha kiritish haqida"gi 14/7–sonli qarori.

O'zbekiston Respublikasi Markaziy banki boshqaruvining 2024 yil 31 yanvardagi "Tijorat banklari kapitalining monandligiga qo'yiladigan talablar to'g'risidagi nizomga o'zgartirish va qo'shimchalar kiritish haqida"gi 42/14–sonli qarori.

[60] O'zbekiston Respublikasi Markaziy banki boshqaruvining 2025 yil 8 apreldagi "Banklarga o'rnatiladigan makroprudensial normativlar hamda ular tomonidan beriladigan kreditlar (mikroqarzlar) bo'yicha to'lovlarning eng yuqori qiymatlariga doir talablar to'g'risidagi nizomni tasdiqlash haqida"gi 7/3-sonli qarori.

Figure 66. LTV Ratios for Mortgage and Car Loans

LTV Distribution of Mortgages
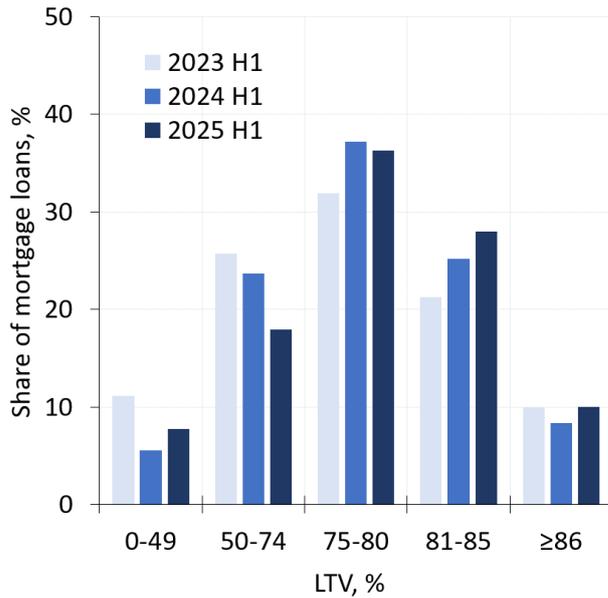
Weighted Average LTV of Mortgages, %
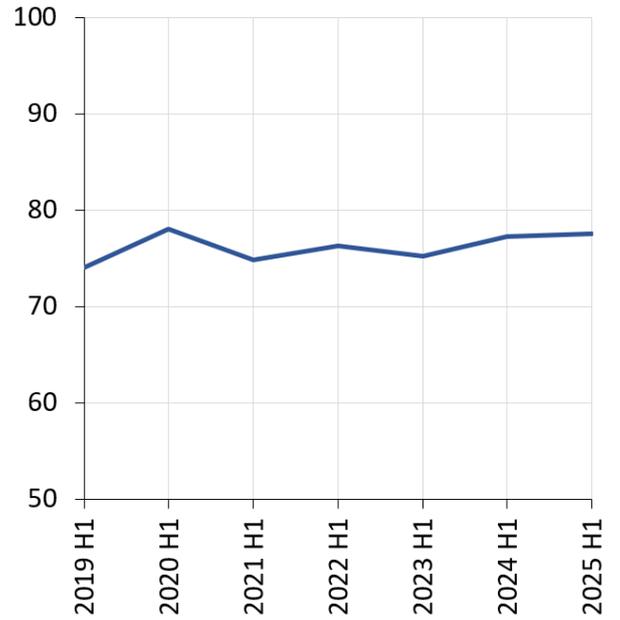
LTV Distribution of Car Loans
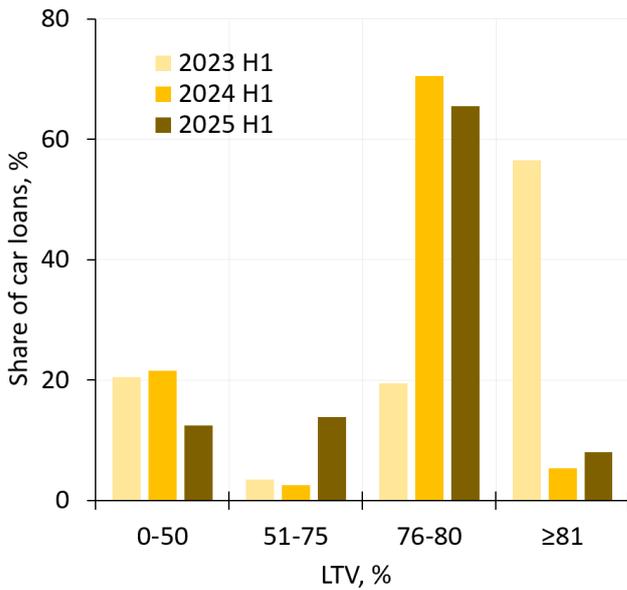
Weighted Average LTV of Car Loans, %
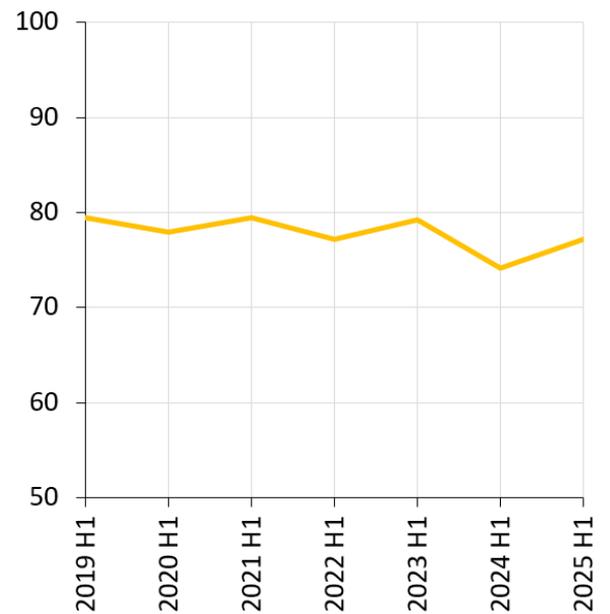
Source: CBU staff calculations.

Note: The weighted average LTV ratio is calculated by the weighted average value based on the LTV level and loan amount of each loan.

Figure 67. Effectiveness of Initial Indirect LTV Cap on Car Loans
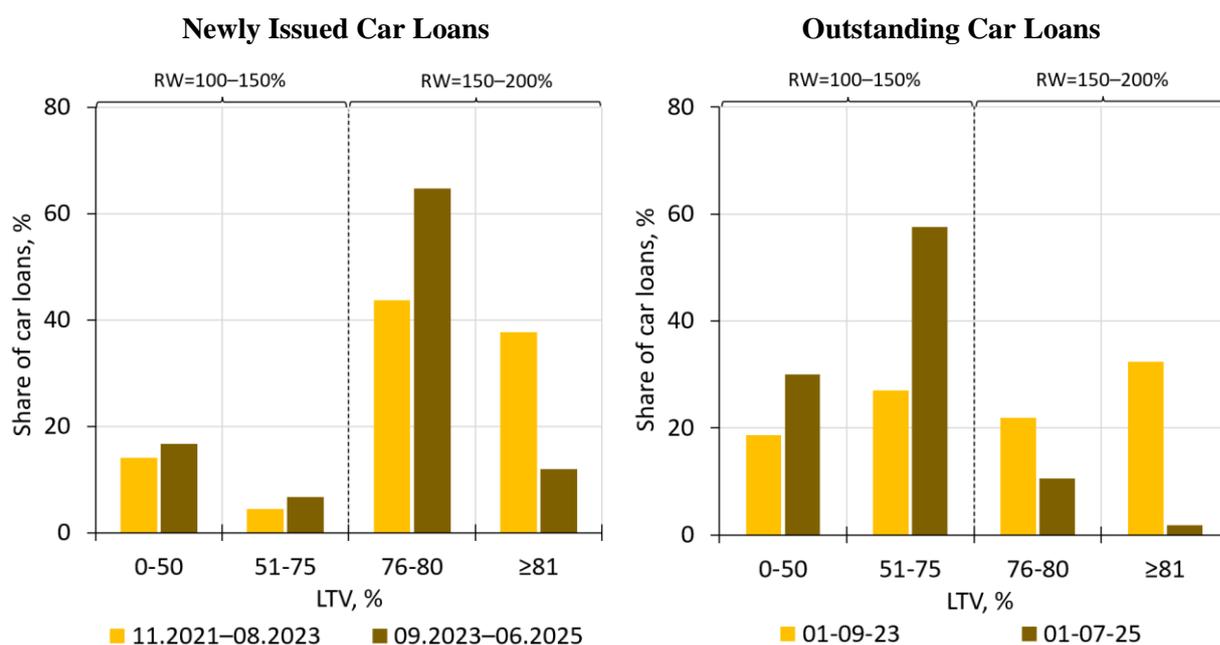
Source: CBU staff calculations.

Notes: From August 20, 2023, the risk weights for car loans were determined based on the LTV ratio, and the initial indirect LTV cap for car loans was implemented. Effective from July 1, 2024, the procedure for determining the risk weights of car loans was established using LTV and DSTI ratios.

For newly issued car loans, the period prior to the application of the indirect LTV cap covers car loans issued between November 2021 and August 2023. The period following the introduction of the limit includes car loans issued between September 2023 and June 2025.

For outstanding car loans, the period prior to the introduction of the limit is defined as outstanding amount of car loans as of September 1, 2023, while the period following the introduction of the limit is defined as the outstanding amount of car loans as of July 1, 2025.

High growth rates persist in the outstanding microdebts extended by banks to individuals. As of July 1, 2025, the loan portfolio of individuals amounted to 196.9 trillion UZS, marking a 22% increase compared to the corresponding period of 2024. The annual growth rate of outstanding car loans stood at negative 12%, while the annual growth rates of outstanding mortgages and microdebts were 18% and 73%, respectively[61].

---

[61] The Central Bank of the Republic of Uzbekistan. (2025). Indicators of the banking system.

Figure 68. Annual Growth (YoY) of Outstanding Loans of Individuals %
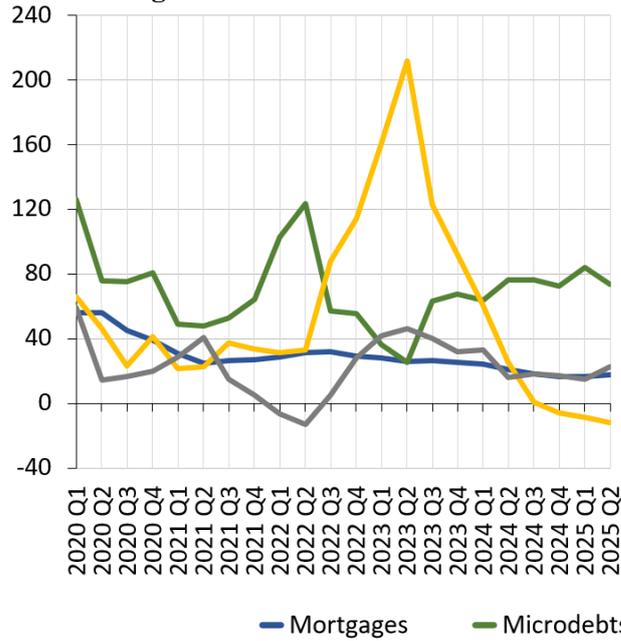
Figure 69. Outstanding Loans of Individuals, trillion UZS

— Mortgages   — Microdebts   — Car loans   — Other
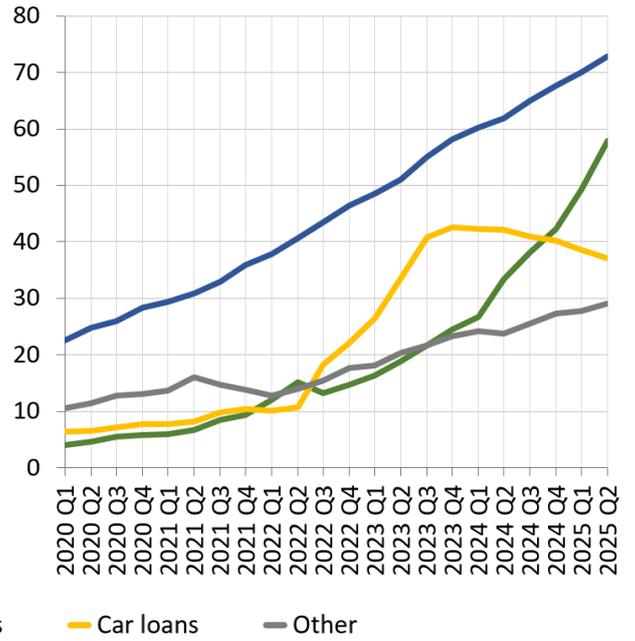
Source: CBU staff calculations.

A negative gap has developed between loans of individuals-to-GDP ratio and its long-term trend. As of July 1, 2025, the outstanding bank loans of individuals-to-GDP ratio was 12%, 0.5 p.p. below its long-term trend. Mortgages, which account for the largest share in the retail loans portfolio, amounted to 72.8 trillion UZS[62] with their ratio to GDP remained broadly unchanged at 5%.

Figure 70. Loans of Individuals-to-GDP Gap[63], p.p.
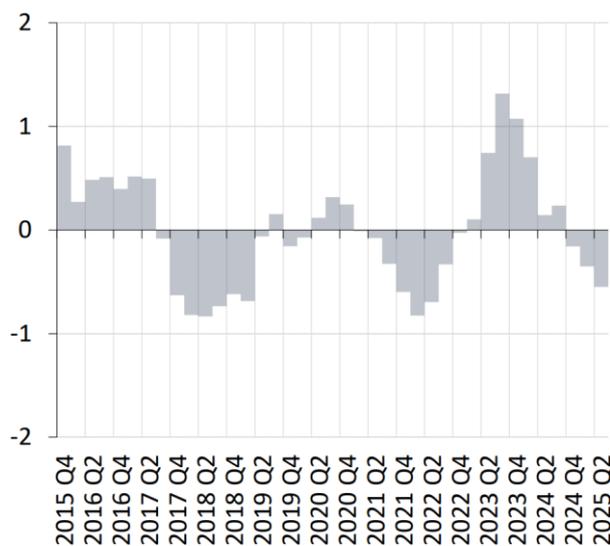
Figure 71. Loans of Individuals by Types, % of GDP
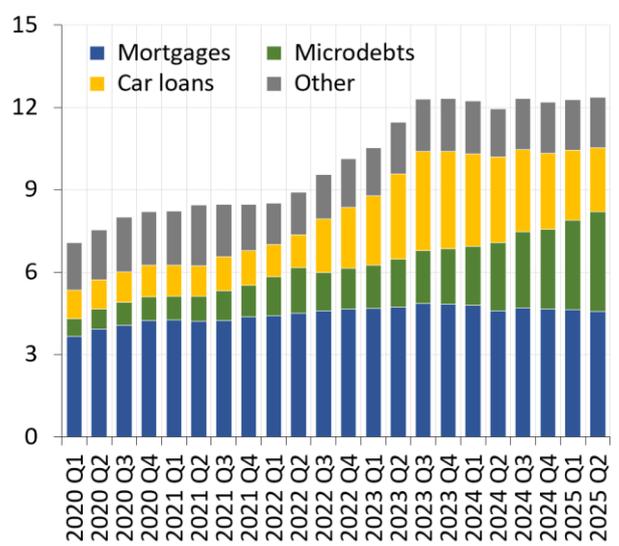
Sources: National Statistics Committee and CBU staff calculations.

---

[62] The Central Bank of the Republic of Uzbekistan. (2025). Indicators of the banking system.

[63] The long-term trend of the loans of individuals-to-GDP ratio is calculated according to the BCBS approach, using a one-sided HP filter with a smoothing parameter of 400,000 for quarterly data.

The nominal GDP per capita in USD increased. In H1 2025, the nominal GDP per capita was equal to 1,662 USD, rising by 220 USD compared with the corresponding period of 2024. In this context, the negative impacts of changes in population and FX rate amounted to 28 USD and 36 USD, respectively, while the change in nominal GDP contributed a positive effect of 284 USD.

Figure 72. Decomposition of Nominal GDP Per Capita, USD

Figure 73. Decomposition of Annual Change in Nominal GDP Per Capita in USD, %
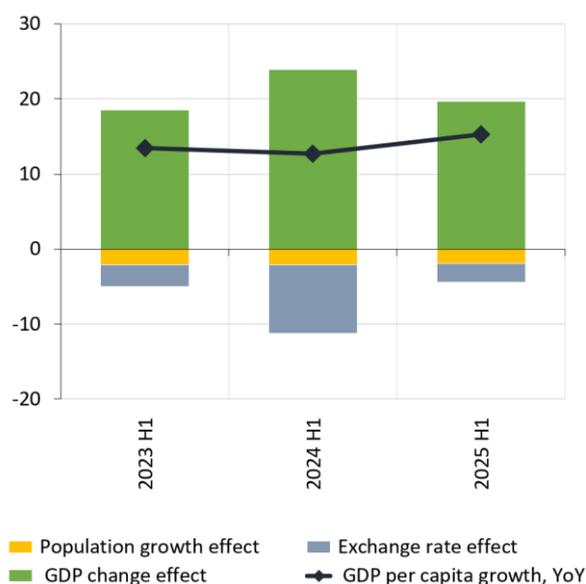
Sources: National Statistics Committee and CBU staff calculations.

Note: GDP per capita is calculated by dividing the GDP at current prices by the country's average population in a certain period. The nominal GDP per capita in USD is obtained by converting the nominal GDP per capita in UZS using the average FX rate of the USD against the UZS during the same period.

The growth rate of nominal GDP per capita in USD accelerated. By the end of H1 2025, the annual change in nominal GDP per capita in USD stood at 15%. In this regard, the change in nominal GDP exerted a positive contribution of 20%, while the negative impacts of changes in the FX rate and population were 3% and 2%, respectively.

Figure 74. Bank Borrowers and Borrowers per 1,000 Individuals*

Number of borrowers, million people
— Number of borrowers per 1000 people (RHS)
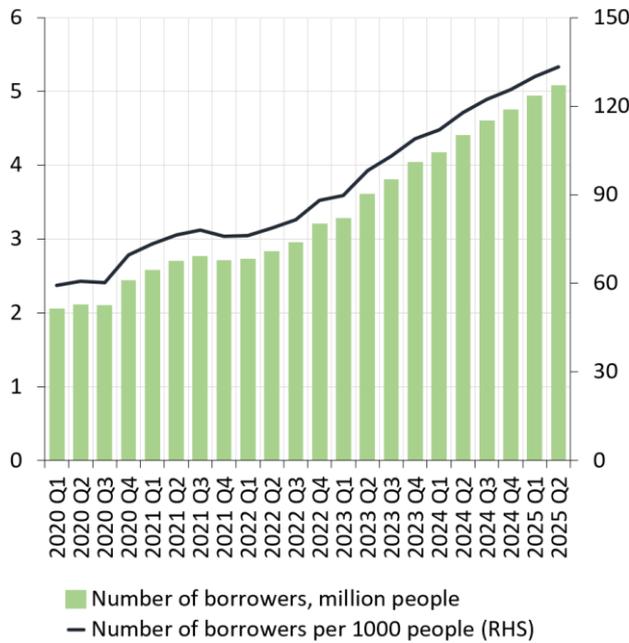
Figure 75. Annual Growth of Nominal Wages (YoY), %
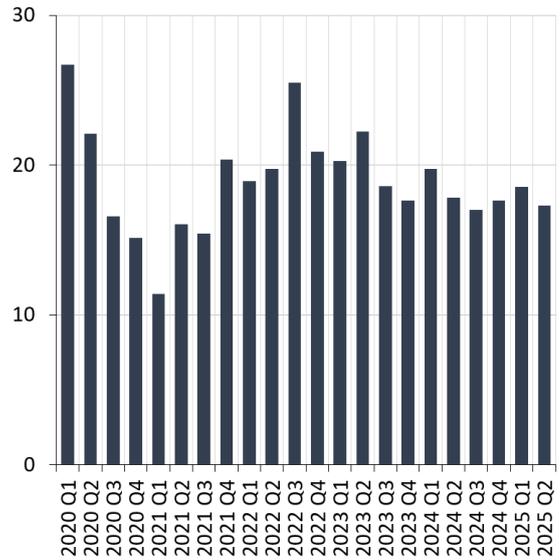
Sources: National Statistics Committee and CBU staff calculations.

Note: *The calculation takes into account individuals who are both residents and within the working age group.

The working age population refers to the total number of men aged 16 to 60 and women aged 16 to 55 who permanently reside in a particular settlement or region.

The number of individuals with outstanding loan obligations to banks is expanding. As of July 1, 2025, more than 5 million people had bank loans, an increase of 15% compared to the corresponding period in 2024. Furthermore, the number of borrowers per 1,000 working age population grew by 29, reaching 238 individuals as of July 1, 2025. The rapid growth in the number of borrowers can be attributed to the expansion of the financial inclusion by banks, as well as the existing credit demand amid a rise in official household income. As of July 1, 2025, the average nominal wage amounted to 6.0 million UZS, reflecting a 17% [64] annual growth.

---

[64] National Statistics Committee. (2025). Average nominal wages (quarterly).

Figure 76. Car Affordability Index
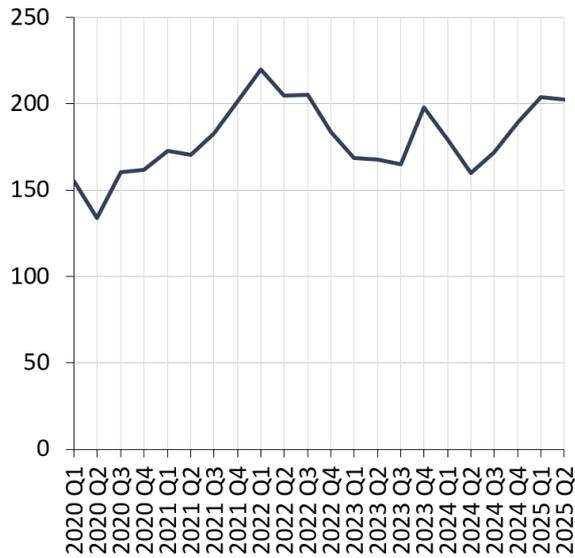
Figure 77. Weighted Average Maturity and Interest Rates of Car Loans

— Weighted average annual interest rate, %
— Weighted average maturity, years (RHS)
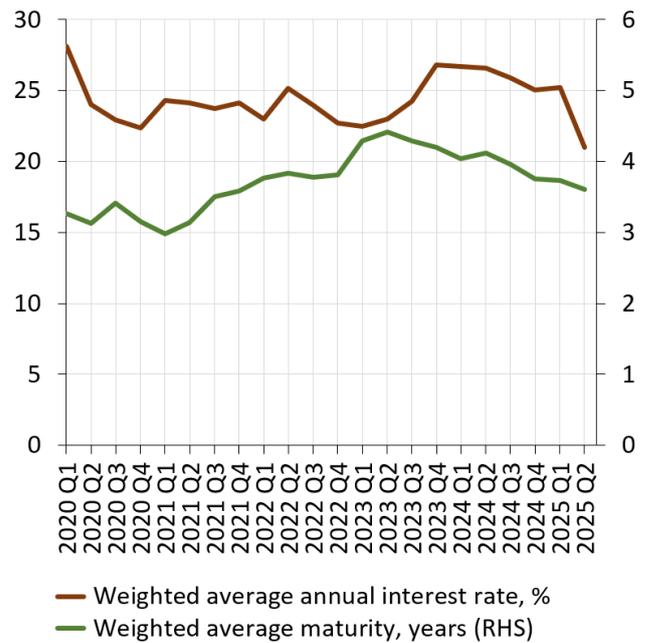
Source: CBU staff calculations.

Note: A decline in the Car Affordability Index signifies a reduced capacity of the population to purchase a vehicle, whereas a rise indicates an enhanced ability to do so.

In H1 2025, households' car affordability improved. Despite a slight shortening in the weighted average term for car loans, households' capacity to acquire vehicles through car loans strengthened due to rising household incomes and contraction in the weighted average interest rate on car loans. In particular, the weighted average maturity for car loans issued in H1 2025 was 3.7 years, which decreased by 0.4 years compared to the corresponding period of 2024. Meanwhile, in H1 2025, the weighted average interest rate on car loans stood at 23%, dropping by 4 p.p. compared to H1 2024.

Figure 78. Car Sales Contracts, thousand
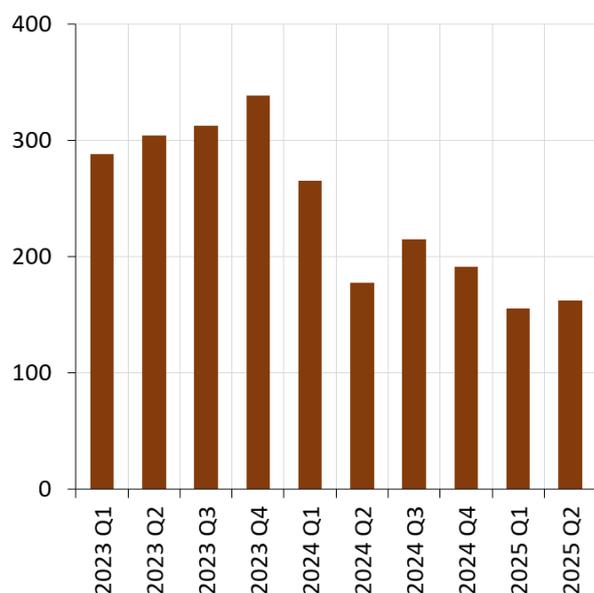
Figure 79. Passenger Cars Manufactured in Uzbekistan and Passenger Car Imports, thousand

■ Domestic   ■ Imported
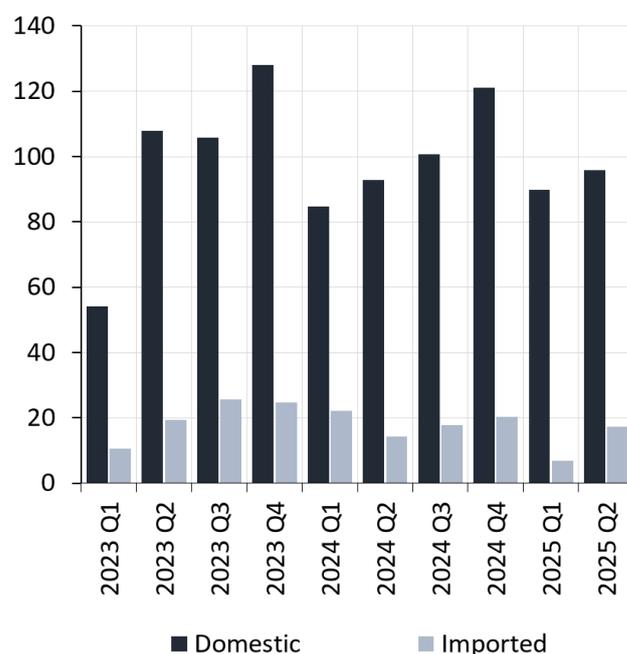
Sources: Ministry of Justice, National Statistics Committee and Customs Committee.

Note: Special vehicles are excluded from the composition of passenger cars manufactured in Uzbekistan.

Activity in the car market has weakened. In H1 2025, the number of passenger cars manufactured in Uzbekistan, excluding special vehicles, amounted to 185,600, growing by 5% compared to the same period in 2024[65]. In turn, import of vehicles from foreign countries totaled 24,100, a reduction of 34%[66]. Also, the activity in the car market declined significantly, with the number of car sales contracts falling by 28% in H1 2025 relative to the corresponding period of 2024.

---

[65] National Statistics Committee. (2025). Industrial production of the Republic of Uzbekistan.

[66] Customs Committee under the Ministry of Economy and Finance. (2025). Information on the import of consumer goods (Vehicles).

Figure 80. Concentration in Bank Car Loan Portfolio, HHI
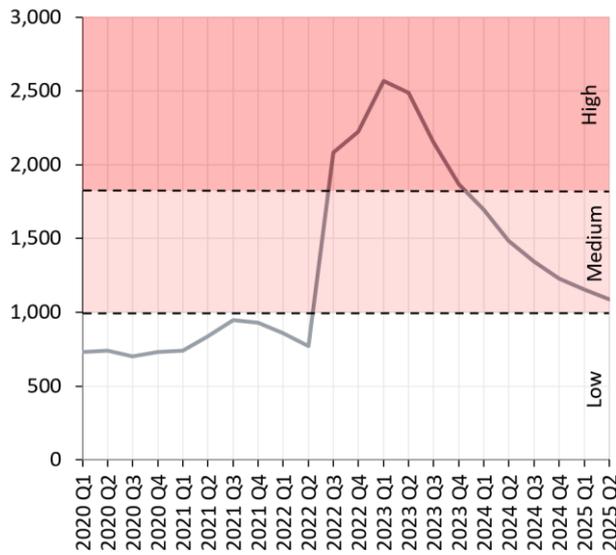
Figure 81. Bank-by-Bank Car Loans Issued to Individuals*, % (as of July 1, 2025)
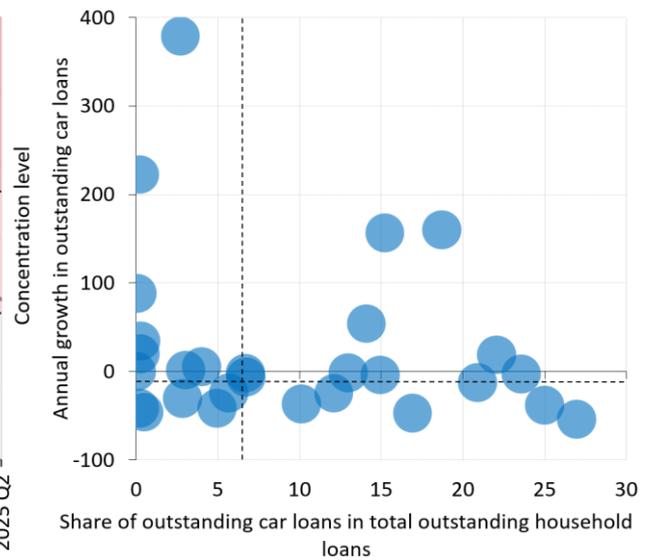
Source: CBU staff calculations.

Note: The HHI categorizes the level of competition into low concentration (below 1000), medium concentration (from 1000 to 1800), and high concentration (above 1800) groups.

*Banks with an annual growth rate in outstanding car loans exceeding 400% are excluded. The dashed straight lines represent the average values of indicators for the banking system as of July 1, 2025.

There are concerns associated with regulatory arbitrage in the car lending market. The concentration risk on car loans is declining. As of July 1, 2025, the HHI for outstanding car loans in banks fell by 397 compared to the same period of 2024, settling at 1,087. Furthermore, as of July 1, 2025, the outstanding car loans in the banking system amounted to 37.1 trillion UZS, accounting for 6% of the total loan portfolio[67]. However, certain banks are creating risks associated with regulatory arbitrage through practices that circumvent existing concentration limits.

---

[67] The Central Bank of the Republic of Uzbekistan. (2025). Indicators of the banking system.

Figure 82. Share of NPLs and NPL Coverage Ratio in Microdebts, %

Share of NPLs (RHS) ▬ NPL coverage ratio
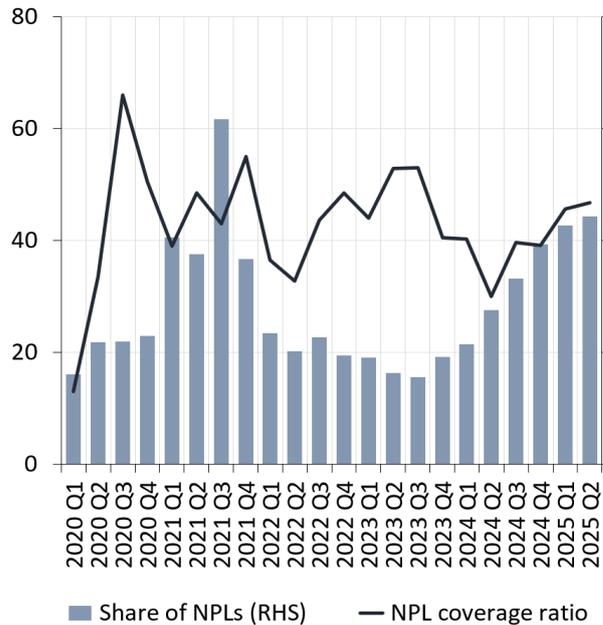
Figure 83. Bank-by-Bank Share of NPLs in Total Microdebts and NPL Coverage Ratio, % (as of July 1, 2025)
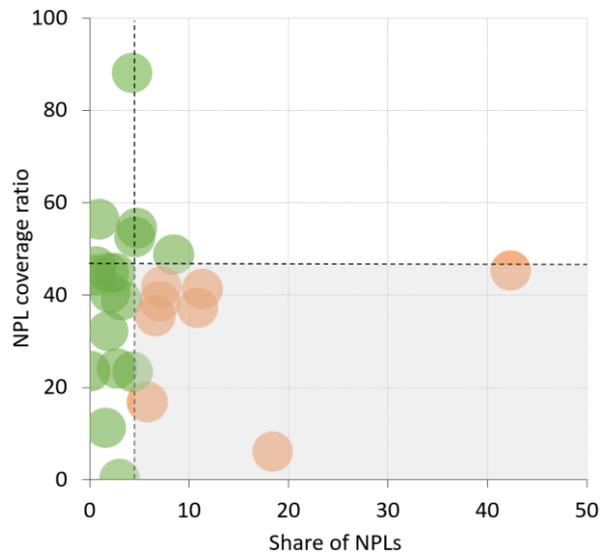
Source: CBU staff calculations.

Note: The color green indicates banks with lower risk relative to the banking system average in terms of either the share of NPLs in total microdebts or the NPL coverage ratio for microdebts. Light red, on the contrary, represents banks with higher risk relative to the banking system average on both of these indicators. Banks with no microdebts in their loan portfolio or have no NPLs on microdebts were excluded. The dashed straight lines represent the average values of indicators for the banking system as of July 1, 2025.

The share of NPLs in microdebts is on the rise. As of July 1, 2025, the share of NPLs in total microdebts stood at 4.4%, increasing by 1.7 p.p. compared to the corresponding period of 2024. The NPL coverage ratio for microdebts amounted to 47%, which is 17 p.p. higher relative to the same period in 2024. The relatively high NPL coverage ratios in banks with elevated shares of NPLs on microdebts mitigate risks in this segment.

Figure 84. NPL Composition of Microdebts, %

Non-satisfactory Doubtful Loss
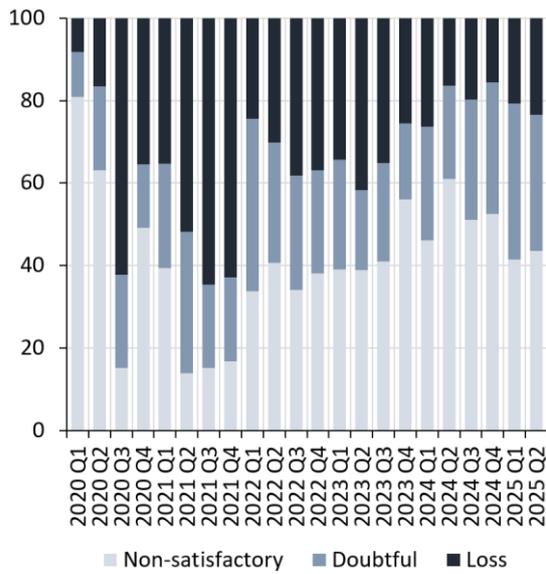
Figure 85. Microdebt Borrowers and Microdebt Contracts per Borrower, million people

Number of microdebt borrowers, million people
Number of microdebt contracts per borrower, units (RHS)
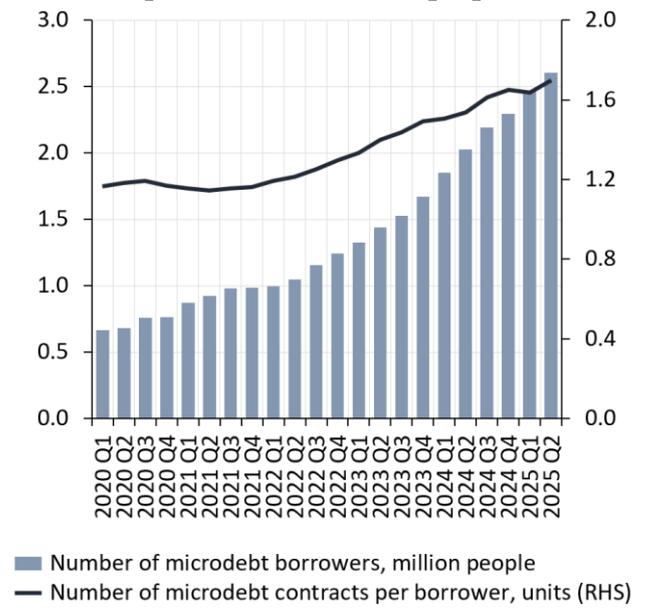
Source: CBU staff calculations.

The quality of the microdebt portfolio has deteriorated. As of July 1, 2025, 57% of NPLs in microdebts were classified as doubtful and loss loans, an increase of 17 p.p. compared to the corresponding period in 2024. The volume of NPLs in microdebts amounted to 2.6 trillion UZS, jumping by 179% compared to July 1, 2024. The rapid growth of the microdebts, along with the rise in NPLs of microdebts, indicates a heightened risk of loan losses for banks in this loan segment.

The number of borrowers with multiple microdebt contracts is increasing. By the end of H1 2025, the number of microdebt borrowers from banks reached 2.6 million, reflecting a 29% year-on-year growth. In addition, as of July 1, 2025, the number of microdebt contracts per borrower stood at 1.7, rising by 11% compared to the same period in 2024.

Figure 86. Bank-by-Bank Microdebt Conditions*, % (as of July 1, 2025)
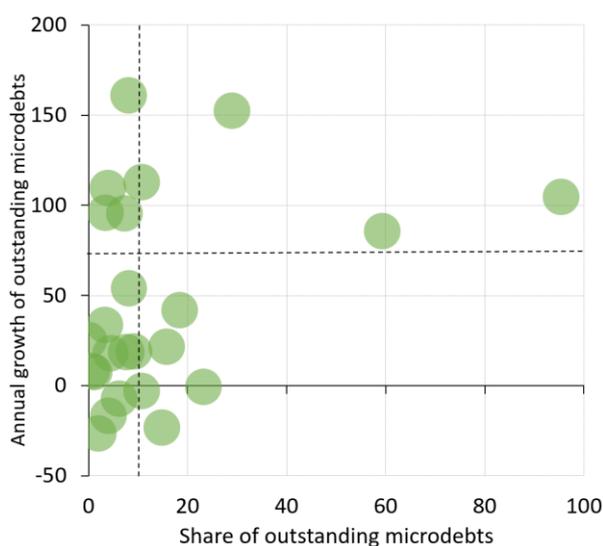
Figure 87. Concentration of Outstanding Microdebts, HHI
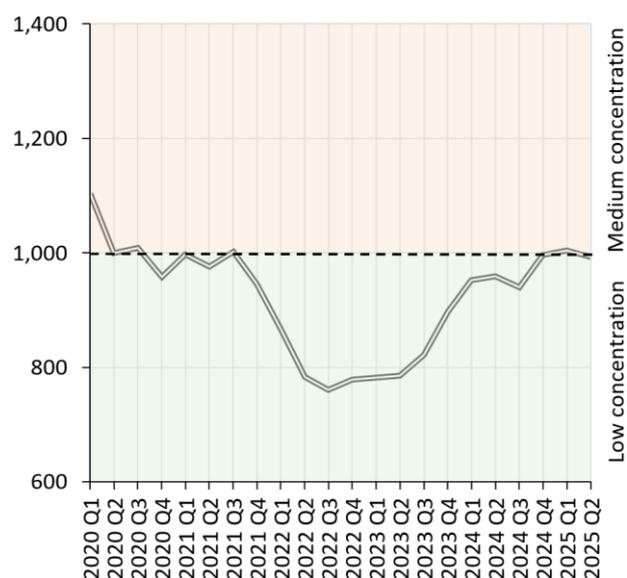
Source: CBU staff calculations.

Note: *Banks with annual growth rates of microdebts exceeding 200% were excluded. The dashed straight lines represent the average values of indicators for the banking system as of July 1, 2025.

The HHI categorizes the level of competition into low concentration (below 1000), medium concentration (from 1000 to 1800), and high concentration (above 1800) groups.

The growth of concentration risk in microdebts stopped. As of July 1, 2025, the HHI for the concentration of outstanding microdebts of banks reached 994, an increase of 34 compared to the corresponding period in 2024. In some banks, the concentration risk on microdebts remains elevated. In this context, the requirement that the share of microdebts in banks' loan portfolios must not exceed 25% was established, and for banks that do not comply with this requirement, a phased alignment with the regulatory requirements is mandated by January 1, 2029[68].

---

[68] O'zbekiston Respublikasi Markaziy banki boshqaruvining 2025 yil 8 apreldagi "Banklarga o'rnatiladigan makroprudensial normativlar hamda ular tomonidan beriladigan kreditlar (mikroqarzlar) bo'yicha to'lovlarning eng yuqori qiymatlariga doir talablar to'g'risidagi nizomni tasdiqlash haqida"gi 7/3-sonli qarori.

Box 4. Debt Burden Survey

The CBU conducted its next round of survey in July 2025 to gauge the debt burden of individuals. More than 4,500 respondents from all regions of Uzbekistan participated in this survey. The survey took into account all bank and non-bank debt obligations of respondents.

According to the survey, 51% of respondents had households consisting of four or five members. Nearly 80% of respondents reported average monthly income of up to 12 million UZS from their primary employment. In addition, 24% of the total respondents indicated having additional income sources. Of this, 75% of respondents had extra income of up to 6 million UZS.

Figure 88. Number of Household Members, %

Figure 89. Breakdown of Monthly Primary Income by Household, %
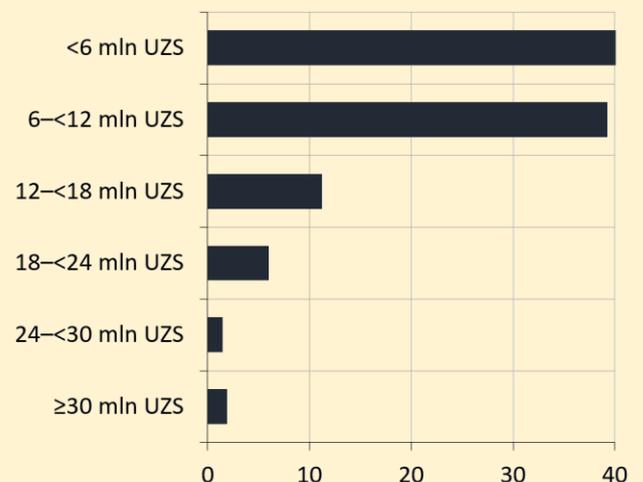
Figure 90. Share of Households with Secondary Income
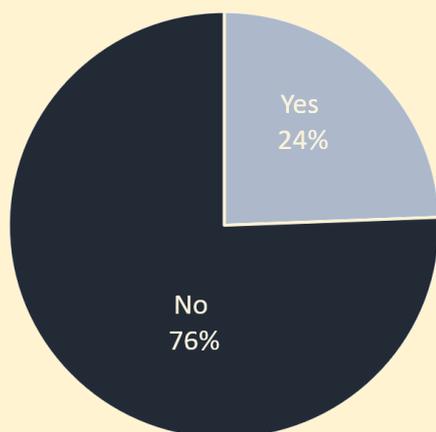
Figure 91. Breakdown of Monthly Secondary Income by Household, %
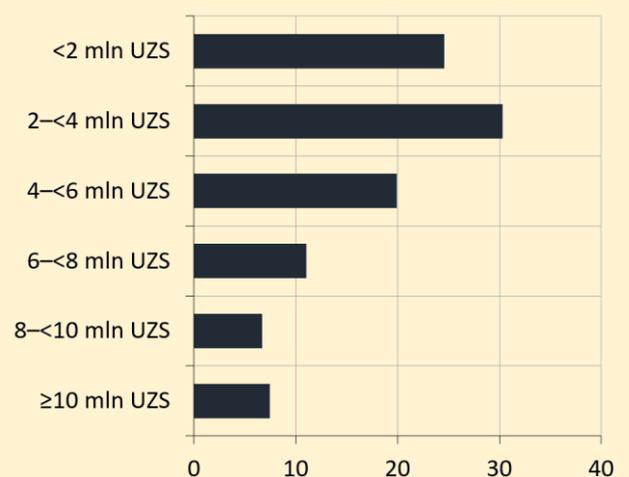
Source: CBU Survey.

At the same time, 73% of all respondents reported having debt obligations to a bank or a non-bank organization. Banks accounted for 63% of the debt liabilities. Among respondents with bank loan, 20% noted that they also have other debt obligations.

41% of borrowed funds were directed toward housing purchase or renovation, as well as vehicle purchases by the respondents. Additionally, 6% of respondents obtained new loans for the purpose of repaying other debts.

Figure 92. Existence of Bank and Non-Bank Debt Obligations
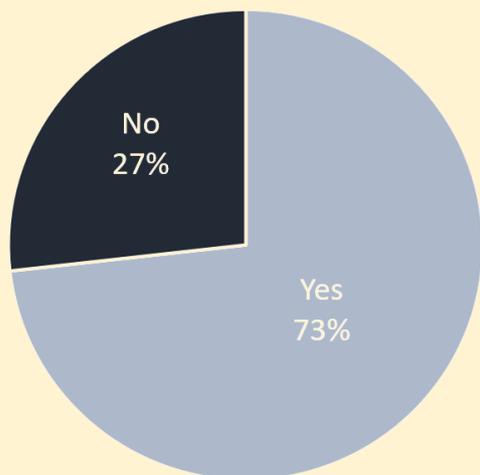
Figure 93. Share of Households Indebted to Banks
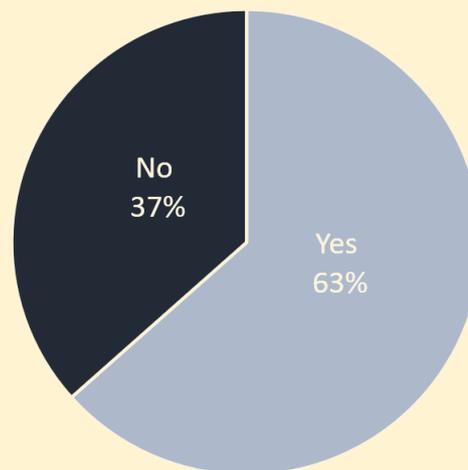
Figure 94. Existence of Non-Bank Liabilities Among Bank Borrowers
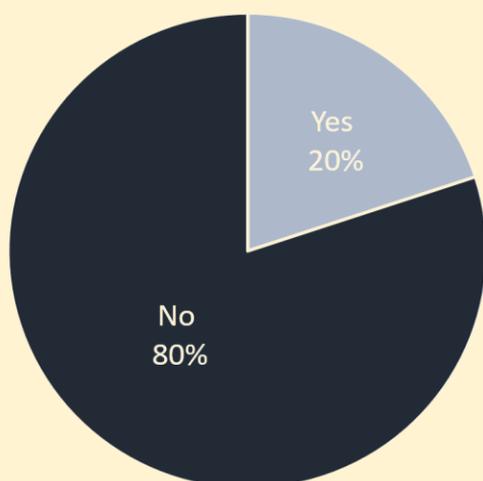
Figure 95. Objectives of Bank and Non-Bank Credit Borrowing, %
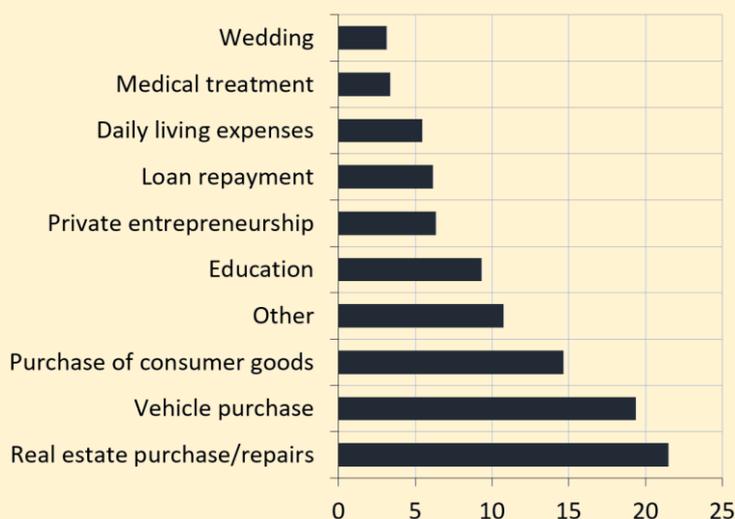
Source: CBU Survey.

In addition, 71% of respondents cited that their monthly payments on total debt obligations are less than 6 million UZS. The share of respondents who reported that the remaining maturity of their total debt obligations as 5 years or more amounted to 27%. Meanwhile, 49% of respondents indicated that the remaining debt maturity is less than 3 years.

61% of respondents reported experiencing difficulties in servicing their debt obligations on time. Nevertheless, the majority of respondents maintain positive expectations regarding changes in their future solvency capacity. In particular, 51% of respondents noted that their debt-servicing capacity will improve over the next 6 months.

Figure 96. Monthly Payment for Total Debt Obligations, %
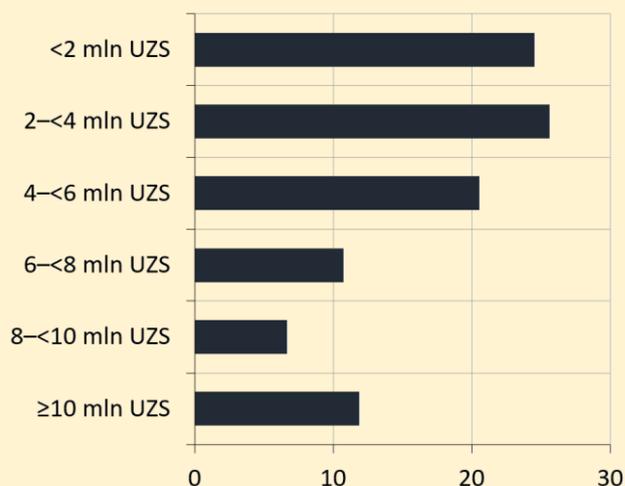
Figure 97. Remaining Maturity of Total Debt Obligations, %
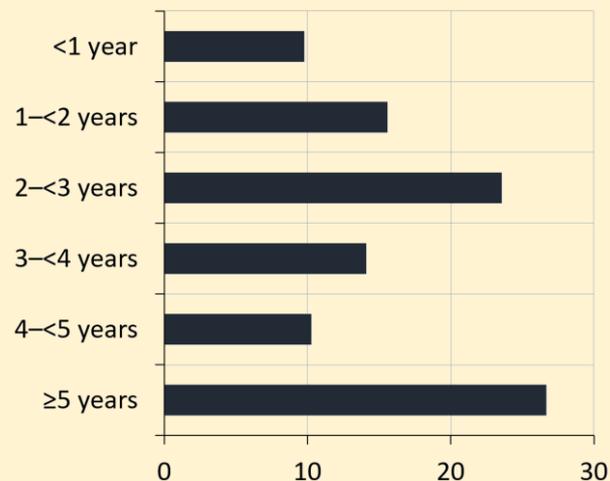
Figure 98. Challenges with On Time Repayment of Debt Obligations
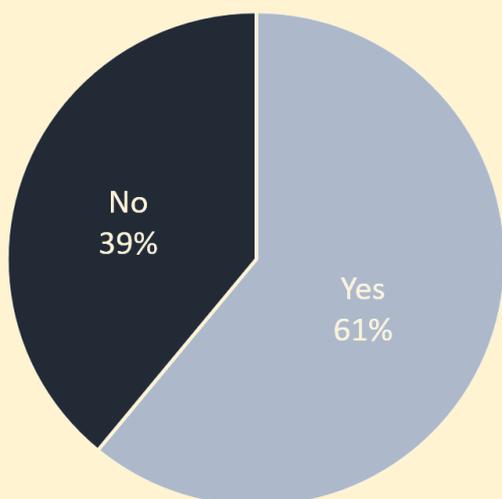
Figure 99. Solvency Outlook for the Next 6 Months
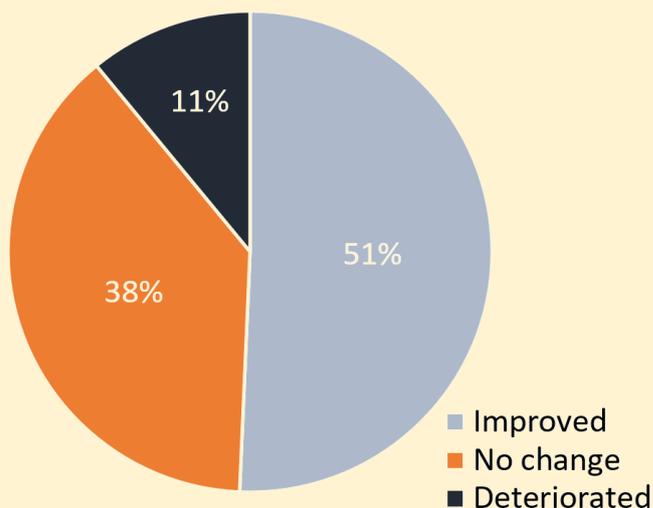
Source: CBU Survey.

In addition, 17% of respondents indicated intentions to take loan or debt over the next 6 months. 40% of these debt obligations are planned to be allocated to the purchase or repair of housing and the acquisition of vehicles.

The average DSTI ratio of respondents, including both bank and non-bank debt obligations[69], was 50%, while the median debt burden stood at 47%[70]. Additionally, 11% of respondents had DSTI ratio exceeding 100%.

Figure 100. Intentions for Credit and Debt Over the Next 6 Months
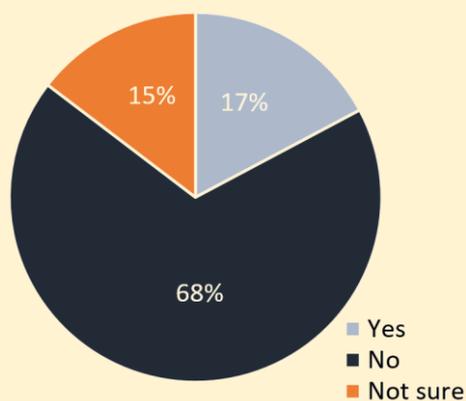
Figure 101. Borrowing Objectives for the Next 6 Months, %

Figure 102. Distribution of DSTI Ratios for Bank Loan Borrowers
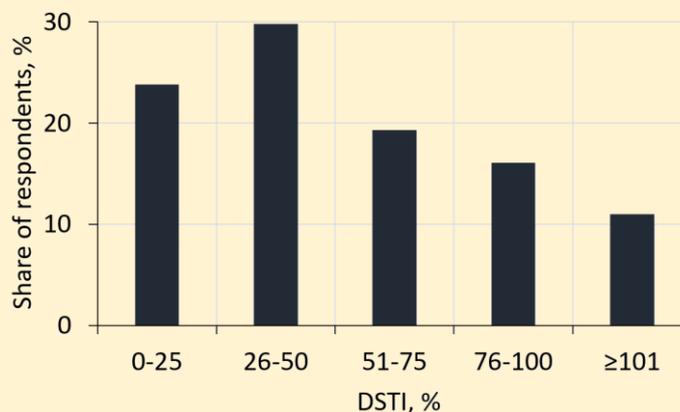
Source: CBU Survey.

---

[69] The total average debt burden of respondents with bank loans was calculated by dividing their total monthly payments on bank and non-bank debt obligations by their total monthly income from primary and additional sources.

[70] To determine households' basic and additional monthly income, expenses, and monthly payments on loans and debts, the average of the upper and lower limits of the intervals given by respondents was used. The conditional upper limit of an unbounded interval was found by adding the previous interval size (the difference between its upper and lower limits) to the lower limit of the current interval.

3.2. Corporate Sector

Concerns in the corporate sector have eased. As of July 1, 2025, despite a 14% annual growth in outstanding loans to legal entities, corporate loans-to-GDP ratio remained below its long-term trend. Moreover, liquidity and profitability indicators of large companies analyzed in H1 2025 exhibited improvement. The ICR in enterprises was maintained above the risk threshold.

Figure 103. Corporate Loan Stocks by Currency Types and Annual Growth Rate

- Stock of corporate loans in FX, trillion UZS
- Stock of corporate loans in national currency, trillion UZS
- Annual growth of the stock of corporate loans (YoY), % (RHS)
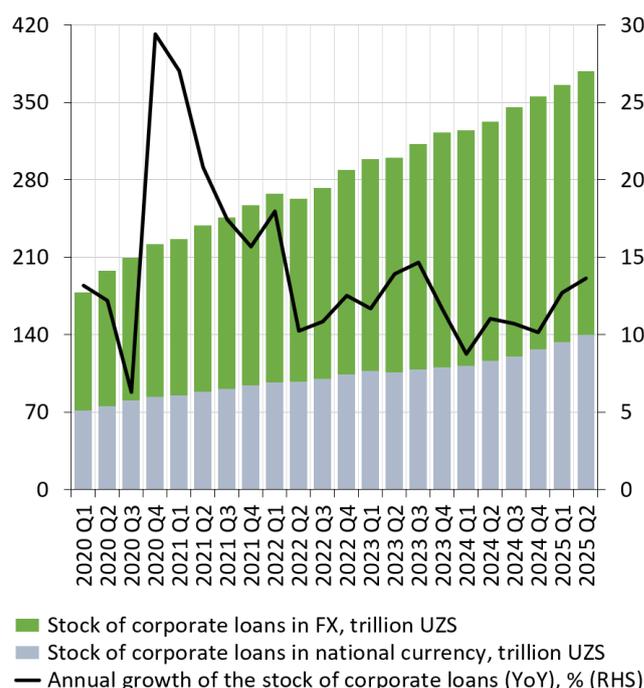
Figure 104. Weighted Average Interest Rate on FX Corporate Loans, %
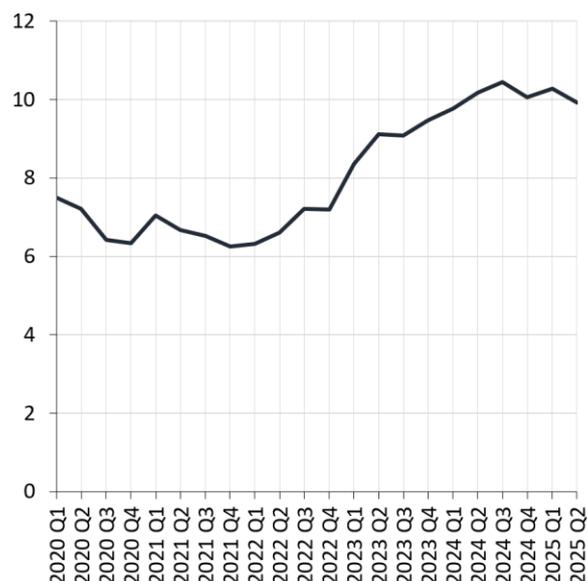
Source: CBU.

The share of corporate loans denominated in FX slightly declined. By the end of H1 2025, FX loans accounted for 63% of outstanding corporate loans, representing a 2 p.p. decrease compared to the corresponding period of 2024. This indicates that the impact of volatility in the FX market on the corporate sector is reduced. Also, the volume of corporate loans in UZS rose by 20% annually, totaling 140 trillion UZS as of July 1, 2025.

The interest rate on corporate FX loans remained almost unchanged. The weighted average interest rate of corporate FX loans extended in H1 2025 was around 10%.

Figure 105. Corporate Loans-to-GDP by Sector, %
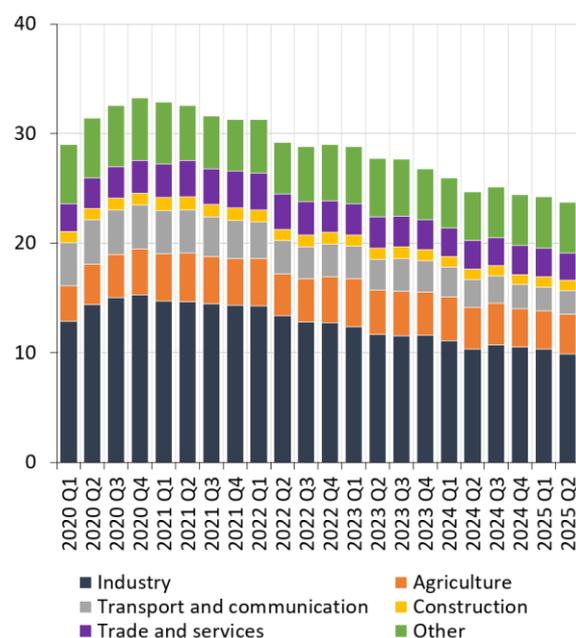
Figure 106. Corporate Loans-to-GDP Gap, p.p.
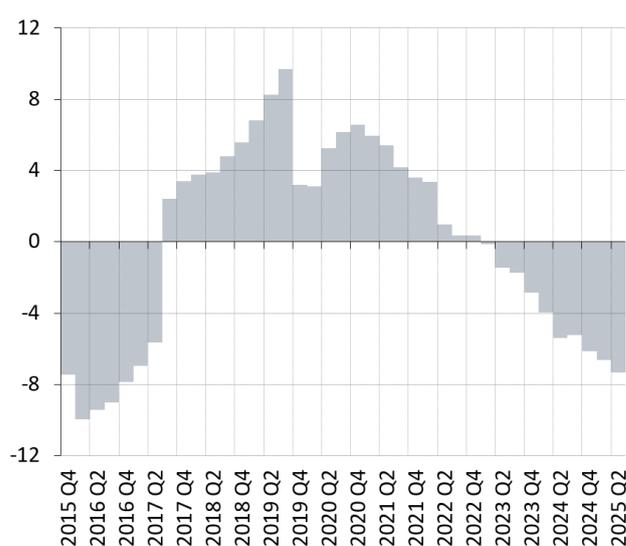
Sources: National Statistics Committee and CBU staff calculations.

The corporate loans-to-GDP ratio declined, with the negative gap relative to its long-term trend widening. At the end of H1 2025, the corporate loans-to-GDP[71] gap stood at negative 7.3%, narrowing by 1.9 p.p. compared to the corresponding period of 2024. Furthermore, as of July 1, 2025, the corporate loans-to-GDP ratio amounted to 24%, a reduction of 1 p.p. relative to the same period in 2024. By the end of H1 2025, the loans-to-GDP ratio in the industrial sector, which constitutes the largest share in the corporate loan portfolio, was 9.9%. In addition, the outstanding loans to the construction sector grew by 23% year-on-year, totaling 15 trillion UZS.

---

[71] The corporate loans-to-GDP gap is calculated by subtracting the long-term trend from the corporate loans-to-GDP ratio. The long-term trend of corporate loans-to-GDP ratio is calculated according to the BCBS approach, using a one-sided HP filter with a smoothing parameter of 400,000 for quarterly data.

Figure 107. Total Liabilities-to-Capital Ratio*
and Share of Loss-making Enterprises, %
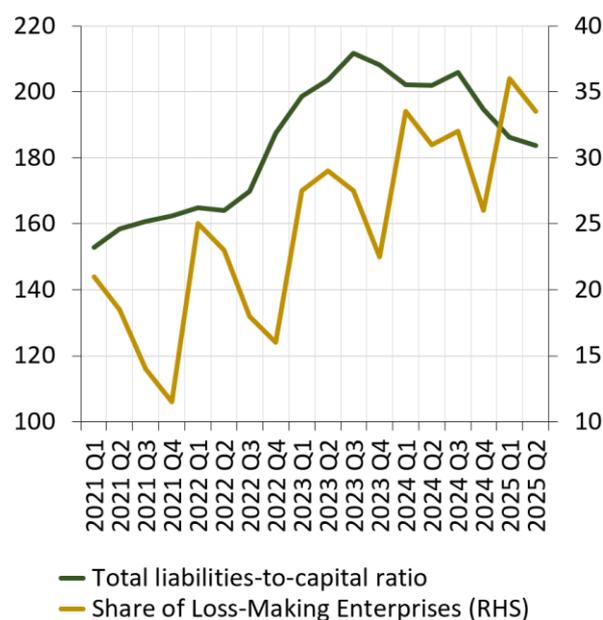
Figure 108. ICR, %**
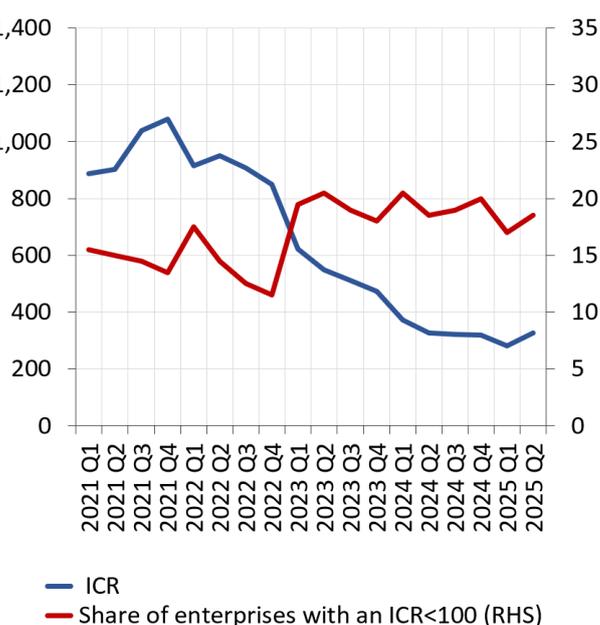
Sources: Unified Corporate Information Portal, financial reports of companies, and CBU staff calculations.

Note: *The total liabilities-to-capital ratio was calculated using the data from 200 large joint-stock companies (JSCs).

**The ICR is calculated using an exponential moving average[72] based on the data from the 200 largest JSCs. This ratio measures the number of times a company's PBT can cover its debt interest costs. If the ratio is less than 100%, the company may be unable to meet its debt obligations in terms of interest payments with its current income, putting it at a high risk of default.

Positive developments were observed in the leverage ratio of selected large enterprises[73]. As of July 1, 2025, the total liabilities-to-capital ratio was 184%, declining by 18 p.p. compared with the same period of 2024. This indicates an improvement in the solvency of enterprises to meet their obligations.

The share of companies with insufficient income to cover interest expenses remained unchanged. By the end of H1 2025, 19% of large enterprises had the ICR below 100%. In addition, as of July 1, 2025, the ICR fell to 326%, and one-third of these enterprises incurred losses in this period. The decline in the ICR indicates a deterioration in the debt-servicing capacity of enterprises to make interest payments on their obligations. However, the ICR remaining significantly above 100% mitigates the risk of default that could arise from enterprises' inability to meet interest payment obligations.

---

[72] The exponential moving average is a technique used to smooth out the value of an indicator by reducing random and short-term fluctuations.

[73] In the corporate sector analysis, 200 large JSCs were selected from large taxpayers based on asset size and data availability.

Figure 109. Absolute[74] and Current Liquidity [75] Ratios, %
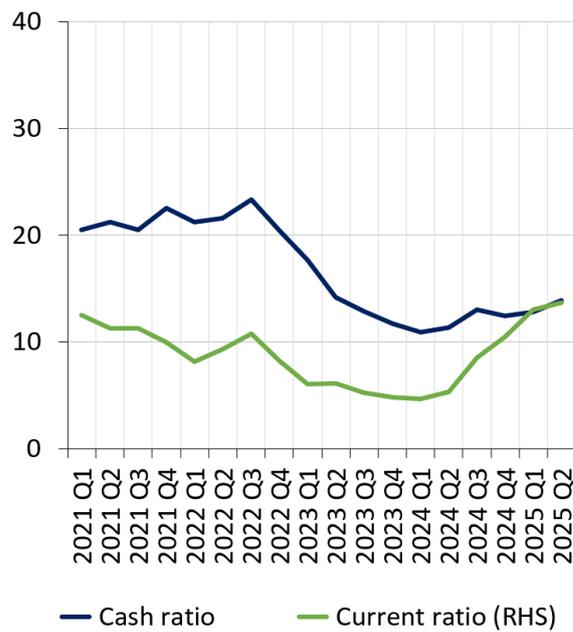
Figure 110. ROA, %
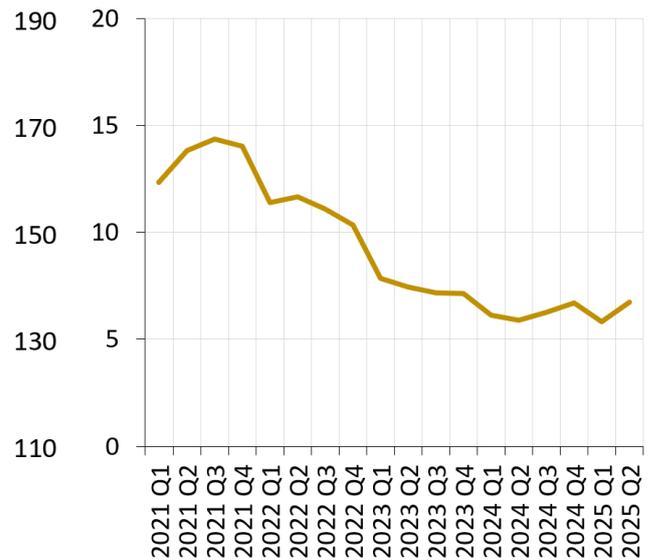
Cash ratio — Current ratio (RHS)

Sources: Unified Corporate Information Portal, financial reports of companies, and CBU staff calculations.

Note: Indicators are calculated using an exponential moving average based on the data from the 200 largest JSCs.

The liquidity of enterprises strengthened. As of July 1, 2025, the absolute and current liquidity ratios of enterprises were 14% and 137%, respectively. The annual growth of 17 p.p. in the current liquidity ratio compared to July 1, 2024 indicates improved capacity of enterprises' current assets to cover current liabilities.

Profitability indicators of companies improved. The ROA of enterprises stood at 6.7% as of July 1, 2025. This indicator rose by 0.8 p.p. on an annual basis compared to the end of H1 2024.

---

[74] The cash ratio indicates the amount of cash covering current liabilities. This ratio is calculated by dividing the company's most liquid funds by current liabilities.

[75] The current ratio is determined by dividing current assets by current liabilities. A ratio of more than 100% indicates a stable financial condition of a company. In the Financial Stability Reports, the list of enterprises analyzed in the corporate sector may change due to updates in the composition of large borrowers and the availability of data.

IV. Asset Markets

4.1. Real Estate Market

In the real estate market, the gap between market and fundamental prices has narrowed.
In H1 2025, the gap between fundamental and market prices for residential property declined from 17% to 4%. A significant rise in supply in the real estate market, coupled with a reduction in speculative demand, contributed to the decrease in market housing prices. Additionally, the growth in the fundamental price of residential property is reflected in the narrowing of the price gap.

Figure 111. Market and Fundamental Prices of Houses, million UZS per square meter
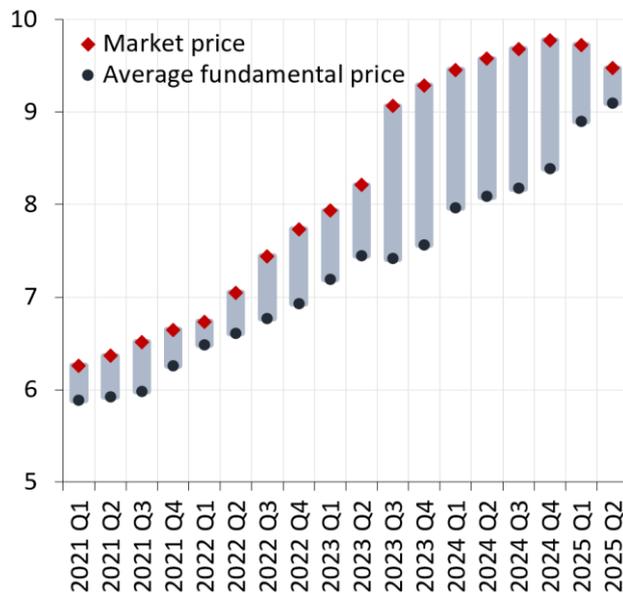
Figure 112. Difference Between Market and Average Fundamental Prices of Houses, %
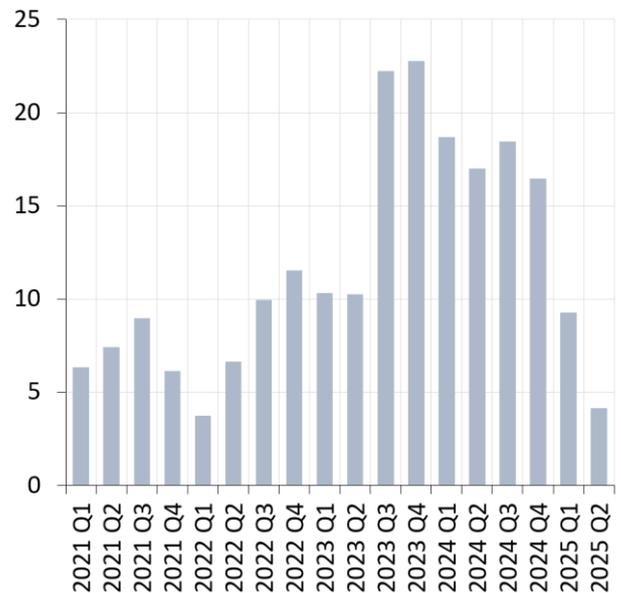
Source: CBU staff calculations.

Note: The average fundamental price of housing is found by calculating the simple arithmetic mean of the fundamental prices determined by price and income[76], State space model[77], Bayesian state space model[78] and Quantile regression[79] model.

The rectangular shape in the diagram illustrates the difference between the market price and the average fundamental price of housing. When the market price exceeds the average fundamental price, the interior of the rectangle is completely filled with dark color; when it is lower, the rectangle is white.

The market prices per square meter are average prices calculated from online advertisements and may not reflect the actual sales prices. The average market price of housing in Uzbekistan is determined by the weighted average value of prices based on the average housing prices in the region and the number of sales contracts.

---

[76] The price and income model methodology is presented in the Financial Stability Report for 2022.

[77] The State Space Model (SSM) methodology is presented in the Financial Stability Report for 2023.

[78] Bayesian state space model (BSSM) methodology is presented in the Financial Stability Report for H1 2024.

[79] Quantile regression model methodology is presented in Financial Stability Report for 2024.

Residential property prices are undergoing a correction. By the end of H1 2025, the market price for residential property declined by 4.9%[80] in national currency and by 6.2% in FX compared to the same period in 2024.

Figure 113. Housing Market Price Indexes (2020 Q1=100)
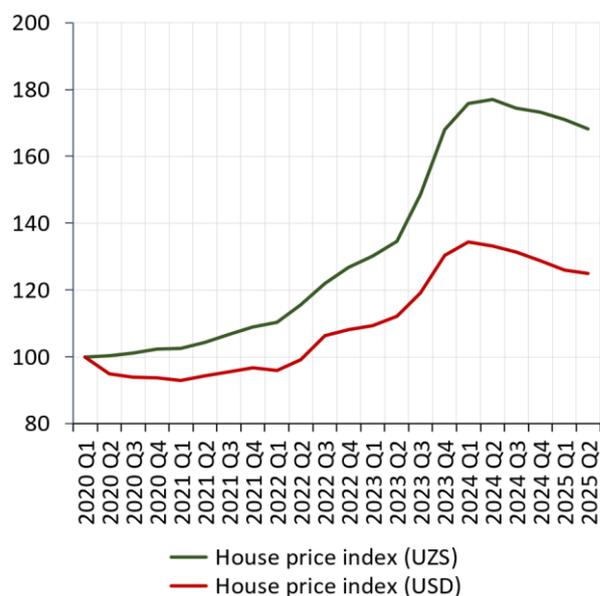
Figure 114. Construction and Assembly Works Prices, (YoY change) %
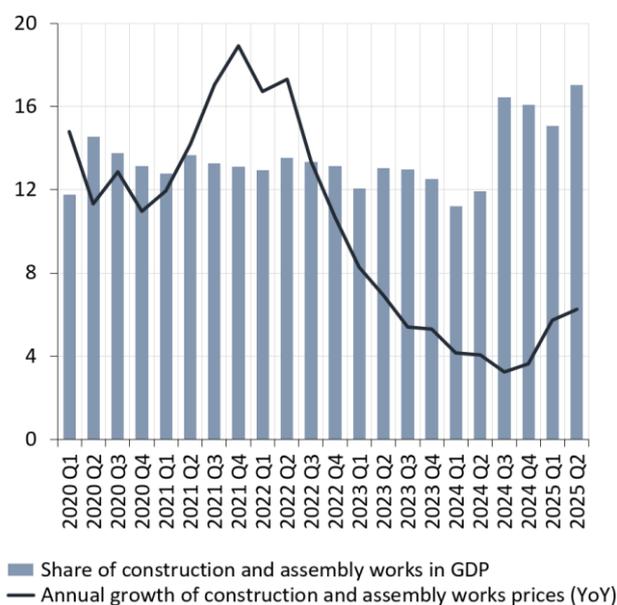
Sources: National Statistics Committee and CBU staff calculations.

The supply in the real estate market expanded. The volume of construction in H1 2025 rose by 72% compared to the corresponding period of 2024 and reached 137.6 trillion UZS[81]. The share of construction in GDP rose to 17%. Moreover, as of July 1, 2025, the annual growth rate of construction and assembly work prices accelerated to 6.3%[82].

---

[80] National Statistics Committee. (2025). Dynamics of the price index in the housing market (compared to the corresponding quarter of the previous year).

[81] National Statistics Committee. (2025). Volume of construction work (monthly).

[82] National Statistics Committee. (2025). Dynamics of the price index for investments in fixed capital and construction works (compared to the previous month).

Figure 115. Housing Affordability Index, %
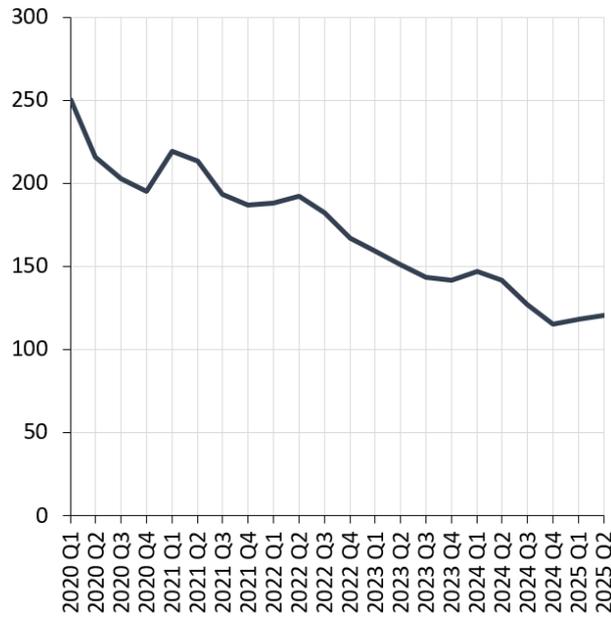
Figure 116. Number of Residential Apartments, million units
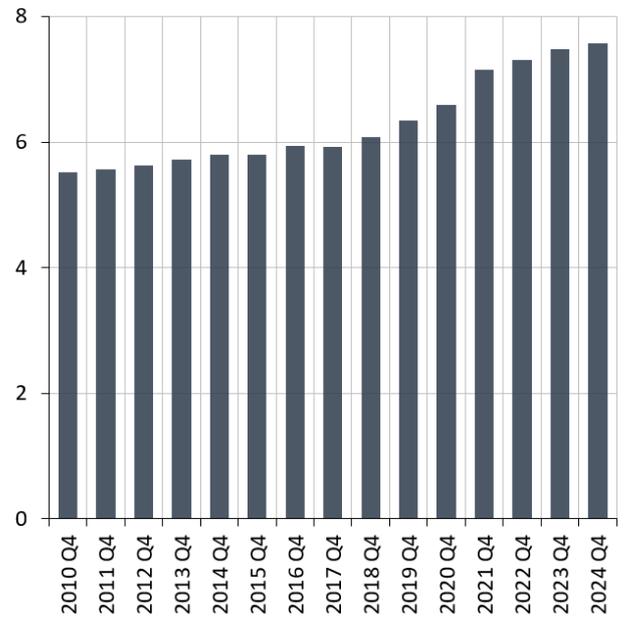
Sources: National Statistics Committee and CBU staff calculations.

Note: A decrease in the housing affordability index[83] indicates a decline in the population's ability to purchase housing, while an increase reflects an improvement in their purchasing ability.

The decline in households' housing affordability has stabilized. In addition to rising household incomes, the extension of mortgages maturities and the reduction in interest rates have helped restore households' ability to purchase residential property through mortgages. In H1 2025, the housing affordability index increased to 121%. In 2024, the number of residential apartments on the real estate market grew by 1%, reaching 7.6 million[84] units.

Residential property prices are declining relative to GDP per capita. As of July 1, 2025, the ratio of housing prices to nominal GDP per capita stands at 22%, down 4 p.p. compared to the corresponding period of 2024. This trend is driven by a 16% rise in nominal GDP per capita, coupled with a decrease in residential property market prices.

---

[83] Housing affordability index methodology is presented in the Financial Stability Report for H1 2024.

[84] National Statistics Committee. (2025). Number of residential apartments (houses).

Figure 117. Ratio of Housing Prices* to Nominal GDP Per Capita, %
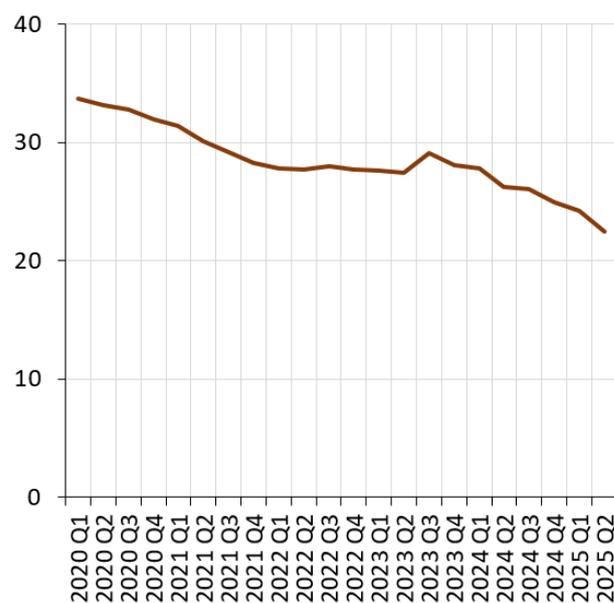
Figure 118. Ratio of Annual Growth Rate of House Prices to Annual Growth Rate of Rents, index
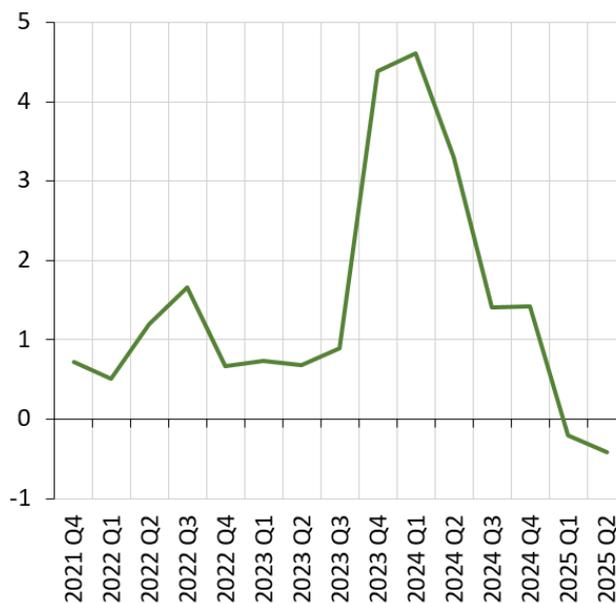
Sources: National Statistics Committee and CBU staff calculations.

Note: *The market prices per square meter are average prices calculated from online advertisements and may not reflect the actual sales prices.

Speculative demand in the real estate market has declined. By the end of H1 2025, residential rents in the real estate market rose by 12% compared to the same period of 2024[85]. This suggests a decrease in the investment attractiveness of the real estate market.

Residential property prices growth is decelerating relative to income. By the end of H1 2025, the annual growth rate of the average monthly salary was 22 p.p. higher than the annual growth rate of residential property prices, reaching 17%[86]. In particular, among CCA and other regions, Uzbekistan is one of the countries where housing prices have declined annually due to rising average monthly salaries. This indicates that changes in household income have become a more significant factor, while the influence of non-fundamental factors on residential property prices in Uzbekistan has diminished.

---

[85] National Statistics Committee. (2025). Price index of all goods and services in the Republic of Uzbekistan, compared to last month.

[86] National Statistics Committee. (2025). Average monthly salary (quarterly).

Figure 119. Ratio of Annual Growth Rate of Housing Prices to Annual Growth Rate of Average Monthly Salary, index
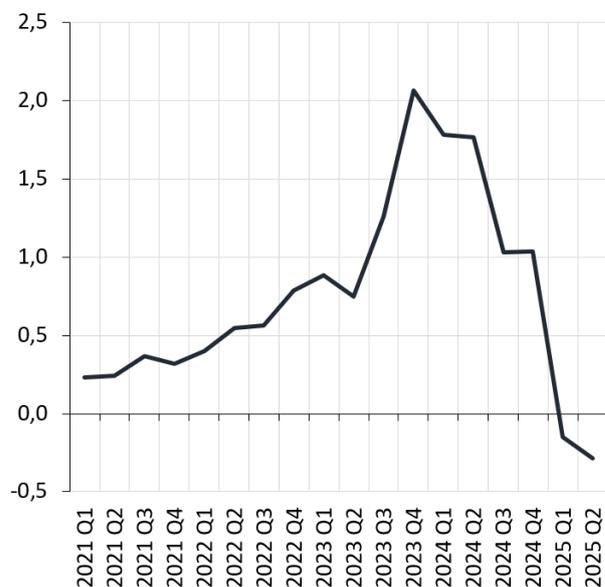
Figure 120. Ratio of Annual Growth Rate of Housing Prices to Annual Growth Rate of Average Monthly Salary in Selected Countries in H1 2025, index
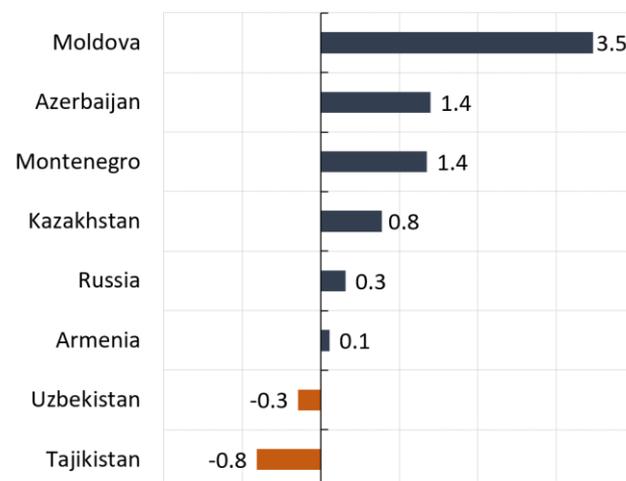
Sources: National authorities, National Statistics Committee and CBU staff calculations.

Slowing demographic growth in Uzbekistan may dampen future demand in the real estate market. In recent years, the growth rate of the country's population has been slowing. As of July 1, 2025, the annual growth rate of the population stood at 2%, reaching 37.9 million people[87]. In this context, 84 people per square kilometer of the country's territory[88]. Population density in Uzbekistan is 5 people more than the median level among CCA countries.

---

[87] National Statistics Committee. (2025). Permanent population (total).

[88] National Statistics Committee. (2025). Population density (total, quarterly).

Figure 121. Population Density in CCA Countries*, people per square kilometer

- IQR
- Median
- Uzbekistan
- Annual growth rate of population in Uzbekistan, % (RHS)
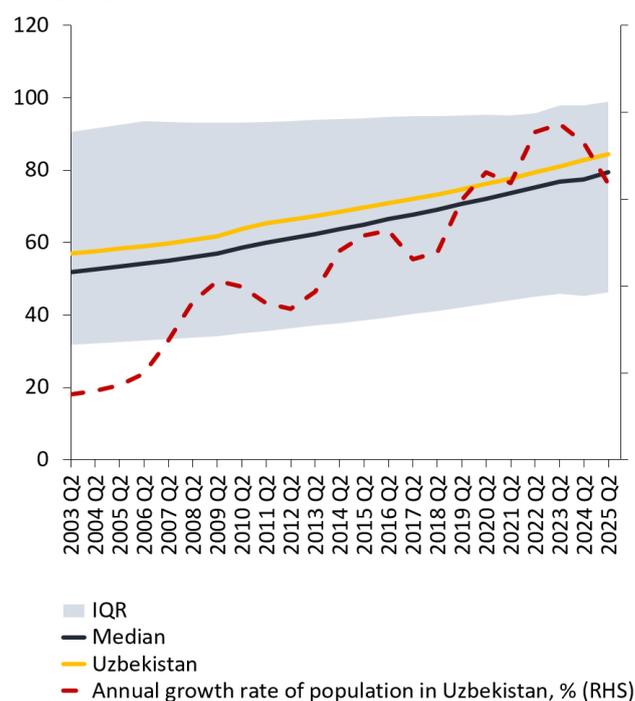
Figure 122. Number of Housing Sales Contracts, thousand
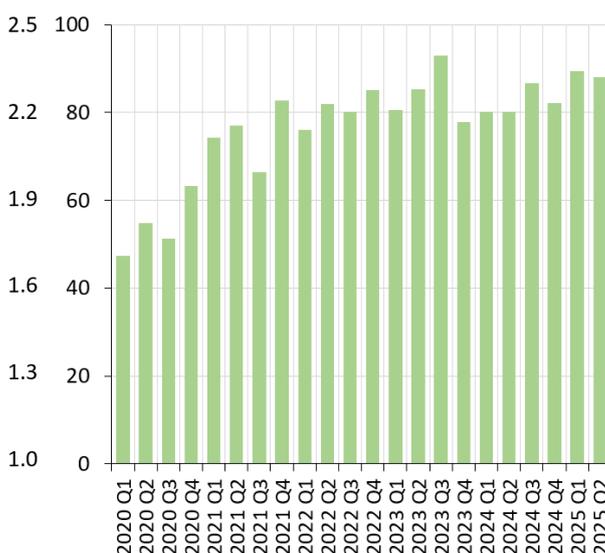
Sources: United Nations, National authorities, National Statistics Committee, Ministry of Justice and CBU staff calculations.

Note: *Armenia, Azerbaijan, Tajikistan, Uzbekistan, Kyrgyzstan and Kazakhstan are taken into account.

The real estate market remains active. By the end of 2024, 98% of households[89] owned residential property. At the beginning of 2025, the housing needs of 157,300 households without own residential property are contributing to the sustained demand in the real estate market. The number of housing sales contracts in H1 2025 reached 177,500, an 11% increase compared to the corresponding period of 2024.

Most banks are highly exposed to potential risks in the real estate market. As of July 1, 2025, mortgages accounted for 13% of the total loan portfolio in the banking system[90]. In addition, the Tier I capital to total loans stood at 20%.

---

[89] National Statistics Committee. (2025). Share of households with private housing.

[90] The Central Bank of the Republic of Uzbekistan. (2025). Information on types of loans.

Figure 123. Ratios of Tier I Capital to Total Loans and Mortgages to Total Loans (as of July 1, 2025)
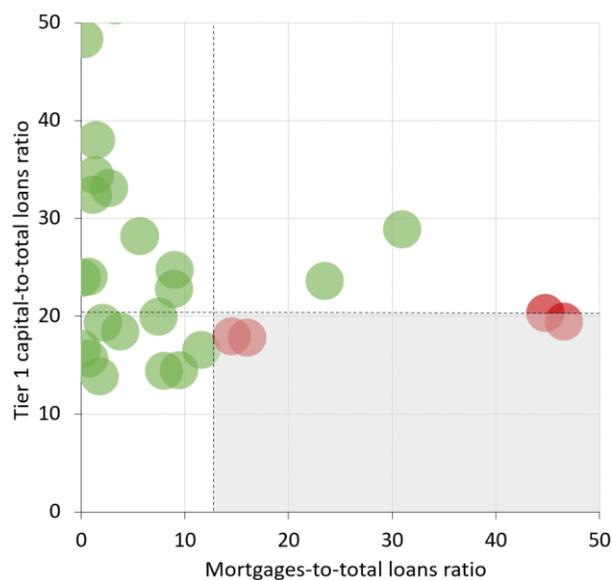
Figure 124. Ratio of the Number of Mortgages to Number of Housing Sales Contracts, %
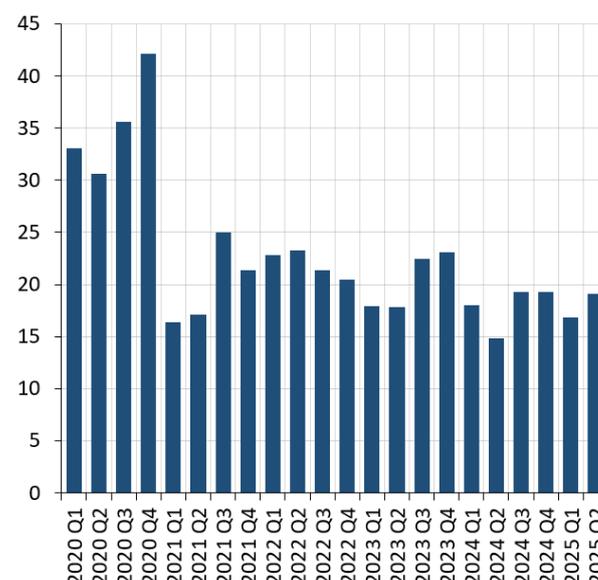
Source: Ministry of Justice and CBU staff calculations.

Note: The color green represents banks with lower risk than the banking system average on at least one of the following indicators: Tier I capital to total loans or mortgages to total loans. The color red represents banks with higher risk than the banking system average on both of these indicators. The bubble size reflects each bank's share of total bank assets. Banks with a Tier I capital to total loans ratio exceeding 50% were excluded from the analysis. The dashed straight lines on the chart represent the average values of these indicators for the banking system as of July 1, 2025.

The influence of non-fundamental factors on real estate prices remains significant. In H1 2025, 18% of housing sales contracts were financed through mortgages. During this period, 31,600 mortgages were issued to the households. The low share of housing purchases financed by mortgages indicates that other factors play a major role in shaping residential property prices.

Figure 125. Number of Mortgages and Mortgage Borrowers per 1,000 Individuals*

Number of housing sales contracts, thousand
Number of mortgage borrowers per 1,000 individuals (RHS)
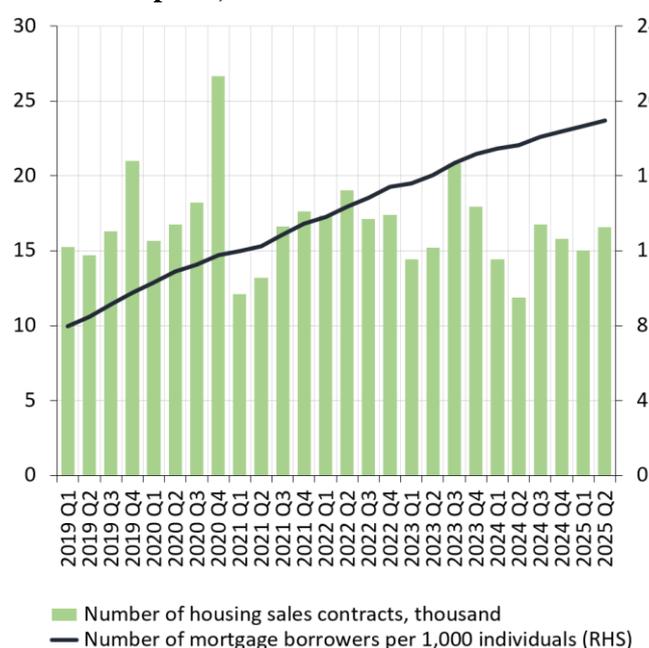
Figure 126. Average Amount of Mortgages, million UZS
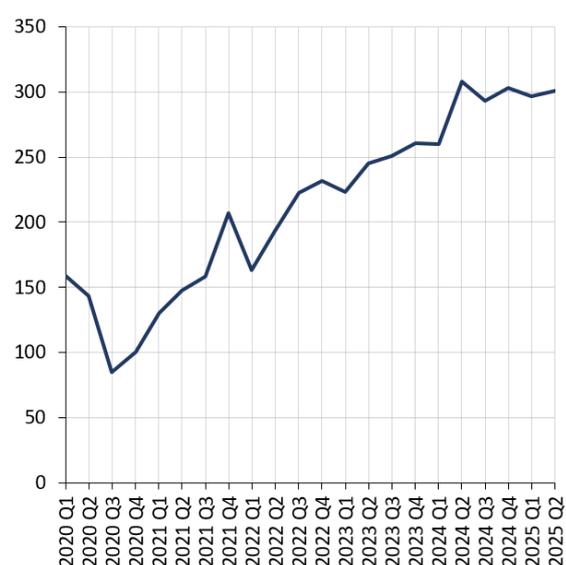
Sources: National Statistics Committee and CBU staff calculations.

Note: *The calculation is based on the number of people who are residents and of working age.

The working age population refers to the total number of men aged 16 to 60 and women aged 16 to 55 who permanently reside in a particular settlement or region.

The number of working-age borrowers with mortgages continues to grow. As of July 1, 2025, 19 out of every 1,000 working-age individuals held a mortgage, representing a 7% increase compared to the same period of 2024. In addition, the average mortgage issued in H1 2025 amounted to about 300 million UZS.

Figure 127. Weighted Average Interest Rate of Mortgages, %
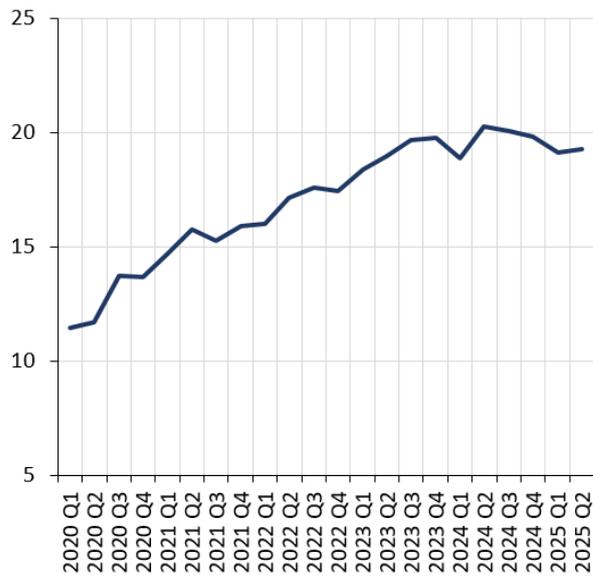
Figure 128. Weighted Average Term of Mortgages, years
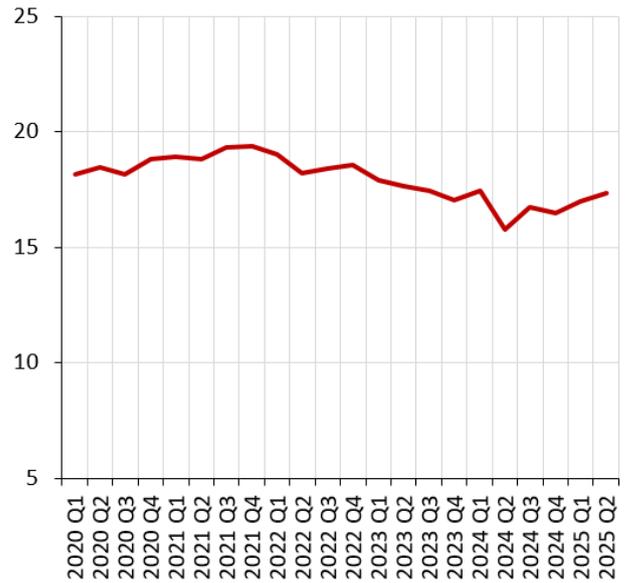
Source: CBU staff calculations.

Mortgage lending standards have slightly eased. In H1 2025, the weighted average interest rate on mortgages was 19.2%, down by 0.4 p.p. compared to the corresponding period of 2024. The weighted average maturity of residential mortgages increased by 0.5 years, reaching 17.2 years.

4.2. Capital Market

International capital market fluctuations had a limited impact on Uzbekistan's capital market. In H1 2025, global geopolitical tensions and ongoing uncertainties related to trade tariff adjustments increased volatility in international financial markets. By the end of H1 2025, however, positive developments were observed in capital markets as a result of the postponement of tariff implementation.

Figure 129. Uzbekistan Composite Index*
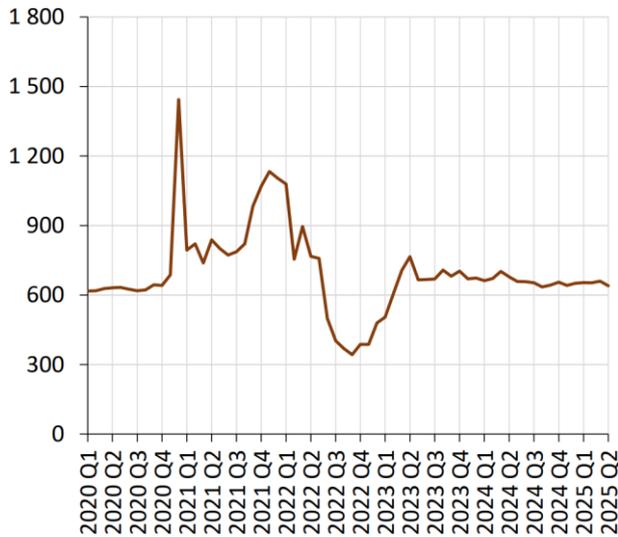
Figure 130. Trade Volume and Number of Transactions in the Corporate Bond Market in Uzbekistan
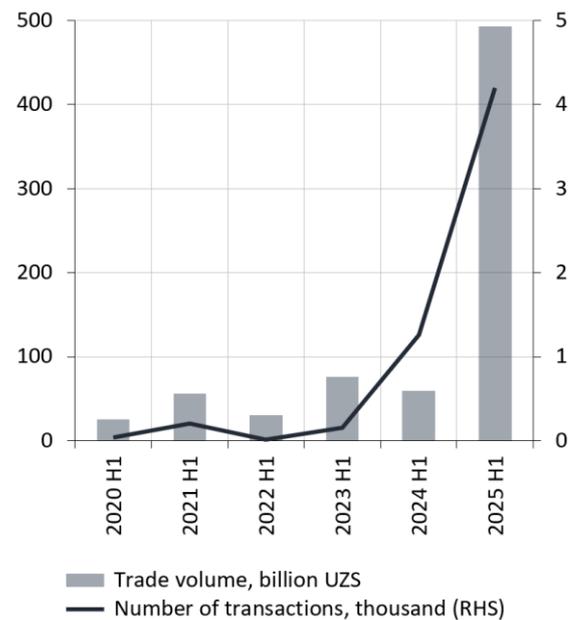
Source: Republican Stock Exchange.

Note: *UCI is a stock market index that represents the overall performance of listed stock issuers on the Republican Stock Exchange. A decrease in the index value reflects a decline in the share prices of issuers included in the quotation list and a reduction in total market capitalization. As of July 1, 2025, there were 93 listed stock issuers on the exchange, out of which 14 were banks.

Trading activity in the corporate bond market increased. In H1 2025, the volume of sales in the corporate bond market reached 493 billion UZS, which is 8.3 times higher than in the corresponding period of 2024[91]. The number of transactions concluded in the corporate bond market increased from 1,300 to 4,200.

---

[91] Republican Stock Exchange. (2025). Press release: H1 2025.

Uzbekistan Composite Index (UCI) is developing steadily. At the end of H1 2025, the UCI stood at 640, down by 38 points compared to the same period in 2024. The reduction[92] in the number of issuers included in the stock quotation list – from 99 to 93 – contributed to the slight decline in the UCI[93].

Figure 131. Stock Market Capitalization in Uzbekistan and Stock Market Capitalization to GDP, trillion UZS
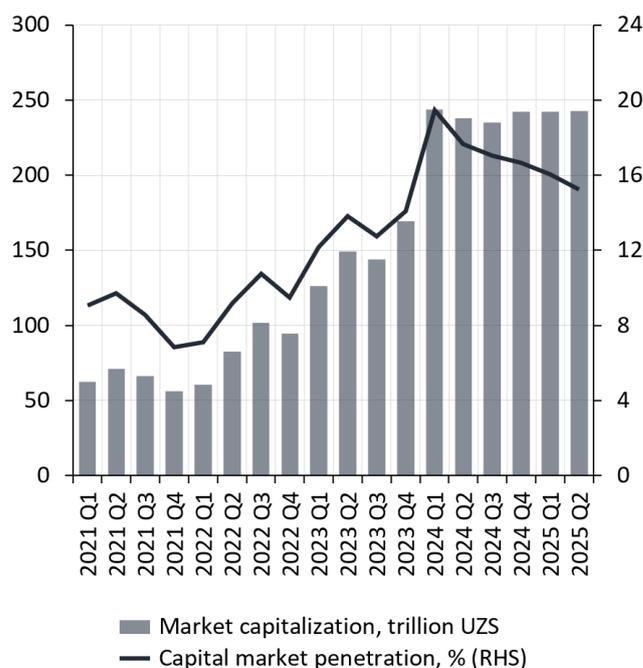
Figure 132. Stock Market Capitalization-to-GDP in Selected Countries, % (as of July 1, 2025)
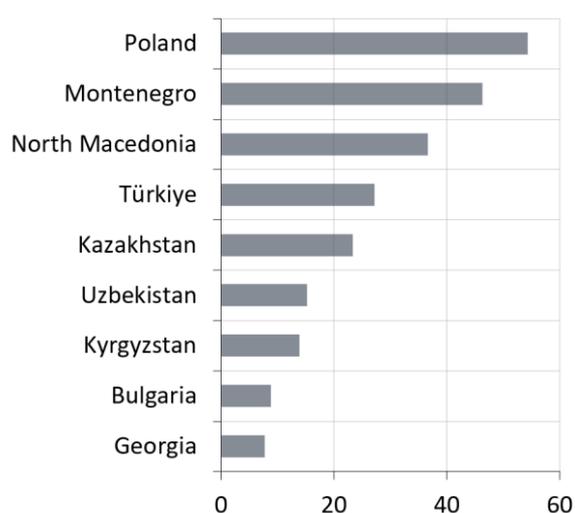
Sources: National authorities and the Republican Stock Exchange.

Note: Stock market capitalization is calculated by multiplying the number of securities of all listed stock issuers on the stock exchange by their closing prices on the trading day.

---

[92] Republican Stock Exchange. (2025). Trading results.

[93] UCI is determined by the following formula:

$$\text{UCI} = \frac{\text{Market Cap}_{\text{current date}}}{\text{Market Cap}_{\text{base date}}} * \text{Base Index}$$

Where,

$Market\ Cap_{current\ date}$ – is the total capitalization of issuers included in the exchange quotation list, which was calculated by the system on the last transaction on the current trading date;

$Market\ Cap_{base\ date}$ – is the total capitalization of issuers included in the exchange quotation list, which was calculated by the system on the last transaction on the date the index was created (29.08.2016);

$Base\ Index$ is the specified value for the index, which is equal to 1000.

The ratio of Uzbekistan's stock market capitalization to GDP has declined. Uzbekistan's stock market capitalization to GDP ratio is relatively low compared to peer countries. As of July 1, 2025, stock market capitalization amounted to 242.8 trillion UZS, an increase of 2.1% compared to the same period of 2024[94]. The ratio of market capitalization to GDP decreased by 2.4 p.p., reaching 15.2% as of July 1, 2025.

Figure 133. Trading Volume of Republican Stock Exchange, trillion UZS
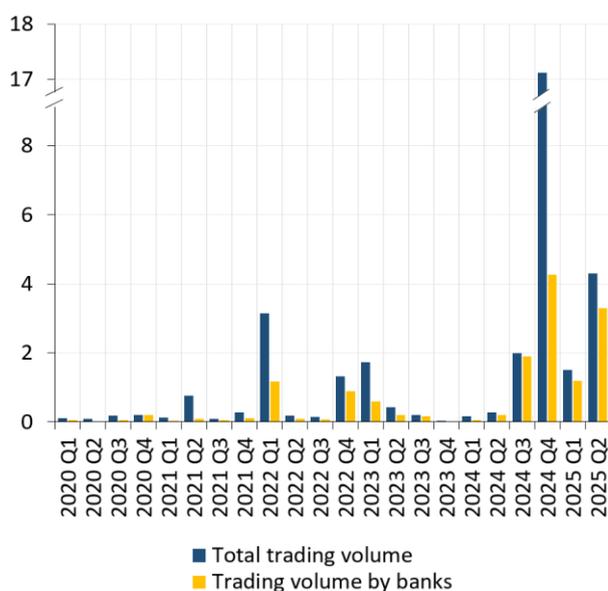
Figure 134. Share of Securities in Bank Assets and Yield on Treasury Bonds, %
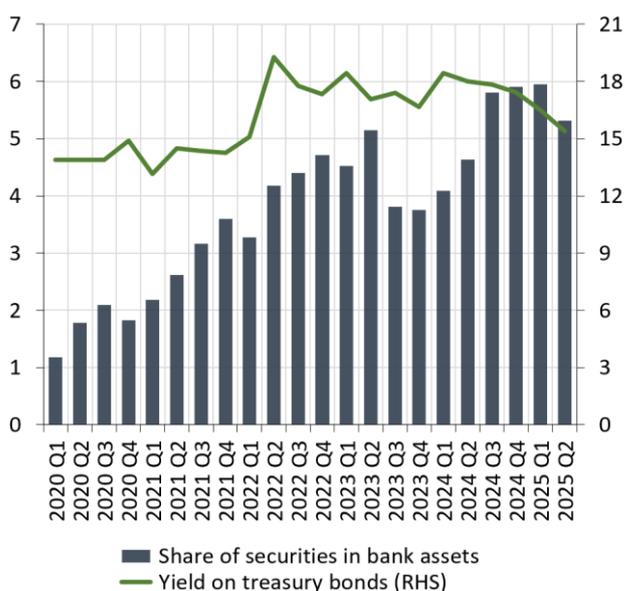
Sources: Republican Stock Exchange, Uzbek Republican Currency Exchange and CBU staff calculations.

The high activity observed on the stock exchange is largely driven by banks. In H1 2025, transactions totaling 5.8 trillion UZS were executed with securities listed on the Republican Stock Exchange, which is 13 times higher than in the corresponding period of 2024[95]. Of these transactions, 78% involved securities held by banks.

---

[94] Republican Stock Exchange. (2025). Press release: H1 2025.

[95] Republican Stock Exchange. (2025). Trading results.

Figure 135. Yield on Uzbekistan Foreign Currency Sovereign Eurobonds, %
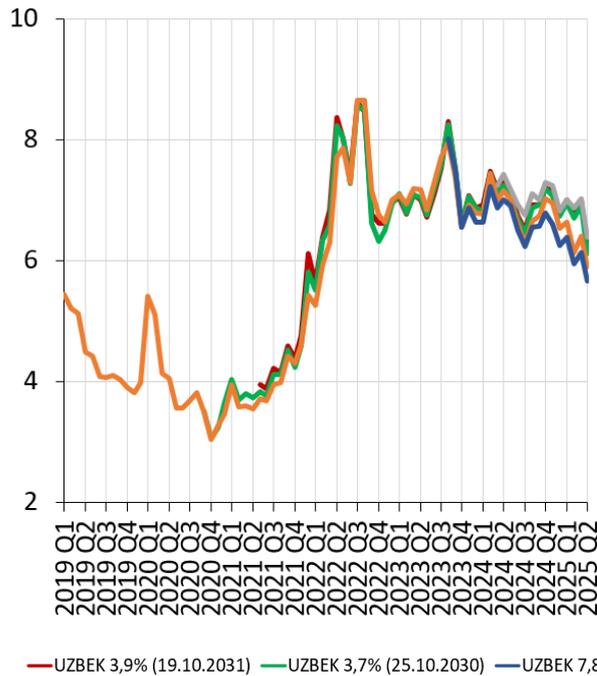
Figure 136. G-spread* of Uzbekistan Foreign Currency Sovereign Eurobonds, basis points

UZBEK 3,9% (19.10.2031) — UZBEK 3,7% (25.10.2030) — UZBEK 7,85% (12.10.2028) — UZBEK 5,375% (20.02.2029) — UZBEK 6,9% (28.02.2032)
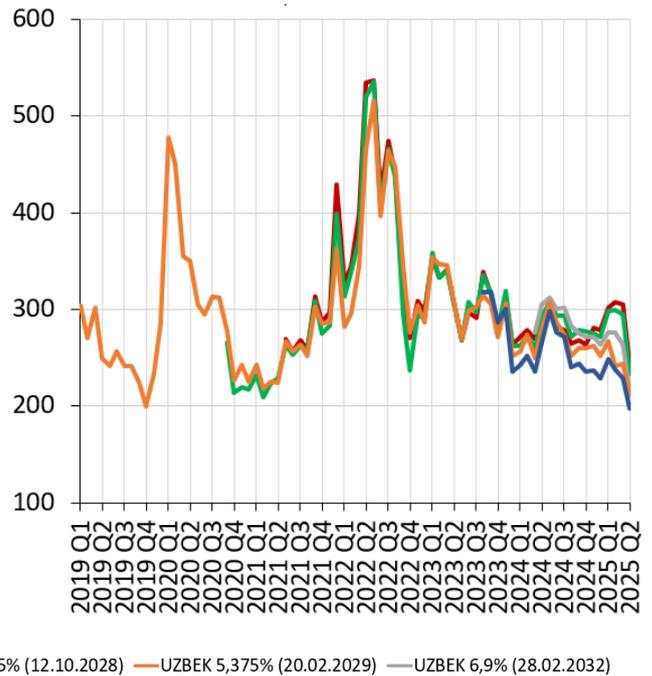
Source: Bloomberg and Ministry of Economy and Finance.

Note: *A G-spread is the difference between the bond yield and its benchmark, the US Treasury bond yield. An increase in the G-spread denotes an increase in the risk level of this bond compared to the benchmark bond.

The yield on treasury bonds has declined. In H1 2025, the average yield of treasury bonds was approximately 16%, down 2.4 p.p. compared to the same period of 2024. Additionally, the share of securities in banks' assets increased by 0.7 p.p., reaching 5.3% as of July 1, 2025. The high proportion of loans[96] and the low share of securities in bank assets indicate that banks continue to focus on traditional banking activities aimed at generating higher profits.

The risk level of Uzbekistan's sovereign eurobonds denominated in FX has declined relative to benchmark bonds. At the end of H1 2025, the yield on Uzbekistan's sovereign eurobonds was around 5.5–6.5%, down 1–1.5 p.p. compared to the corresponding period in 2024. The spread between Uzbekistan's sovereign eurobond yields and benchmark U.S. Treasury bond yields stood at approximately 200–250 basis points, narrowing by at least 50 basis points compared to H1 2024.

---

[96] The Central Bank of the Republic of Uzbekistan. (2025). Statistical Bulletin for June 2025.

V. Macro Stress Test for Banking System

5.1. Macroeconomic Scenarios

By the end of H1 2028, the stability of Uzbekistan's banking system was evaluated under both baseline and adverse macroeconomic scenarios. The baseline scenario assumes the continuation of prevailing macroeconomic trends. Tail risks with significant potential negative impacts – despite their low probability – were incorporated in the development of the adverse scenario. Under this scenario, the possible consequences of rising vulnerabilities that negatively affect the economy, the tightening of external and internal macrofinancial conditions, the further escalation of the geopolitical situation, and the emergence of cyclical systemic risks were assessed (Appendix 2).

According to the adverse scenario, the annual growth rate of real GDP may decline to -0.3% by the end of H1 2026. The future growth of real GDP under the adverse scenario was estimated using the GaR model[97]. In determining the economic growth rate under the adverse scenario, the financial cycle index[98] and historical real GDP values were used as explanatory factors. An additional shock of three SD was applied to the financial cycle index to account for cyclical systemic risks under the adverse scenario, assuming a 5% quantile in the GaR model.

A low-interest rate environment could arise under the adverse scenario due to a reduction in aggregate demand. A decline in economic activity driven by internal and external risks reduces domestic demand. Consequently, the slowdown in inflation leads to a decrease in the policy rate, as well as lower loan and deposit interest rates. In this low-interest rate environment, an increase in credit allocation in subsequent periods is expected to stimulate demand recovery in the economy. This, in turn, is projected to support higher economic growth, partly reflecting a reduction in the GDP base resulting from the earlier decline in real economic growth.

---

[97] GaR model methodology is presented in Financial Stability Report for 2024.

[98] The financial cycle index methodology is presented in the Financial Stability Report for 2023.

Figure 137. GaR Model Results for Real GDP Growth Rate
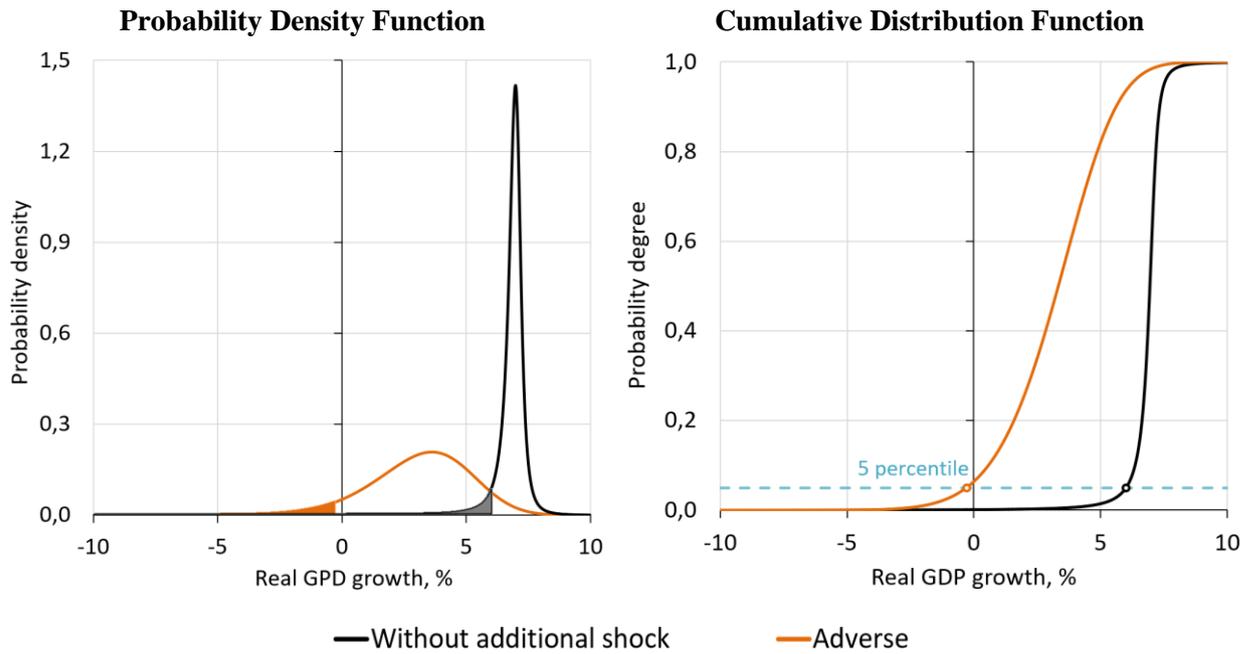
Source: CBU staff calculations.

Note: The probability density function represents the probability density[99] of a random variable over a given interval. The cumulative distribution function represents the degree of probability[100] that a random variable will assume a certain value and is determined by taking the integral from the probability density function.

According to the adverse scenario, a decline in the country's economy increases credit risk. To estimate loan losses, PD of the loan portfolio was assessed separately for national currency and FX. Under the adverse scenario, the PD for the UZS loan portfolio may rise to 24% over the next three years due to the combined effect of higher real interest rates in UZS and declining real GDP growth. The subsequent recovery of the economy is expected to reduce the PD of the UZS loan portfolio to 3% by the end of H1 2028. For FX loan portfolio, the PD may increase to 14% between H1 2025 and H1 2028, reflecting the impact of exchange rate fluctuations and real GDP growth (Appendix 3).

---

[99] Probability density represents the probability of occurrence of a random variable corresponding to a specified interval unit and has values not smaller than 0.

[100] Probability is a quantitative measure of the likelihood of an event occurring, and is between 0 and 1.

The profitability of the banking system under the macroeconomic scenarios was estimated using satellite models. In the following period, the ratio of NII to interest-bearing assets[101], as well as the ratio of total NNII to total assets[102], were modeled separately for national currency and FX.

The negative impact of the economic downturn under the adverse scenario on banks' profitability in the national currency is manifesting with a certain lag. According to the adverse scenario, the ratio of NII in UZS to interest-bearing assets may decline to 4.7% by the end of H1 2027, reflecting the combined effects of lower economic growth and the low-interest rate environment in H1 2026. By the end of H1 2028, as the country's economy recovers, banks' NII is expected to increase, with the profitability on interest-bearing assets in the UZS projected at 9%.

---

[101] The ratio of NII in national currency to total interest-bearing bank assets was projected for future periods based on the previous period's value of this indicator, the credit growth rate, the interest rate margin in national currency (the difference between loan and deposit rates), and scenario-based values of real GDP growth.

The ratio of NII in FX to interest-bearing assets in future periods based on scenarios, the value of this indicator in the previous period, interest rates on loans and deposits in FX, and indicators of the currency exchange rate are used.

[102] The ratio of NNII to total assets was estimated using scenari-based values of GDP growth and exchange rate for future periods.

Figure 138. Macroeconomic Scenarios

Annual Real GDP Growth, %
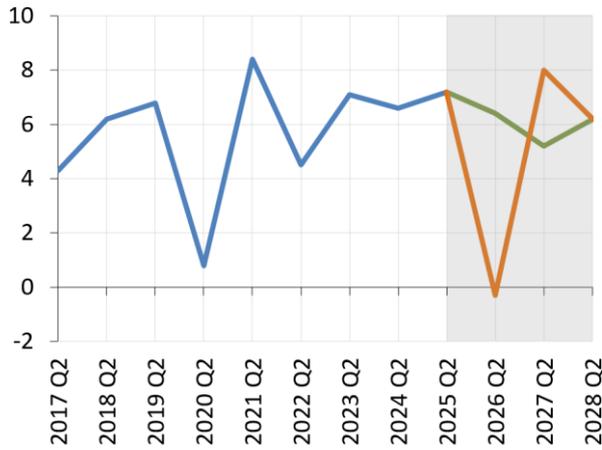
Annual Growth of Outstanding Loans, %
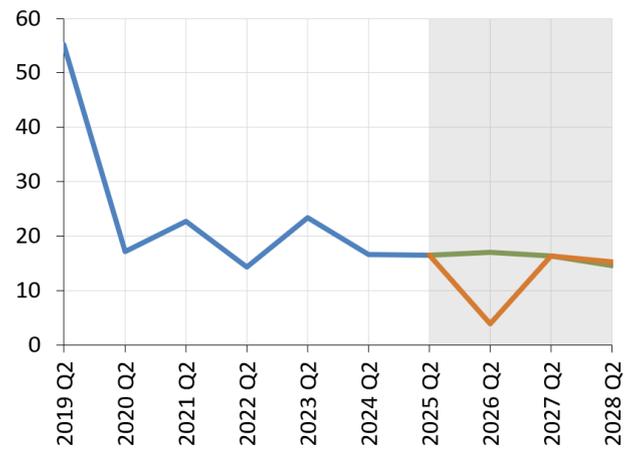
PD of Loans in National Currency, %
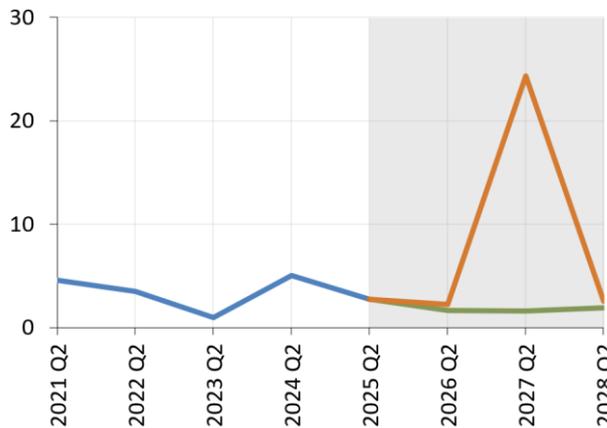
PD of Loans in FX, %
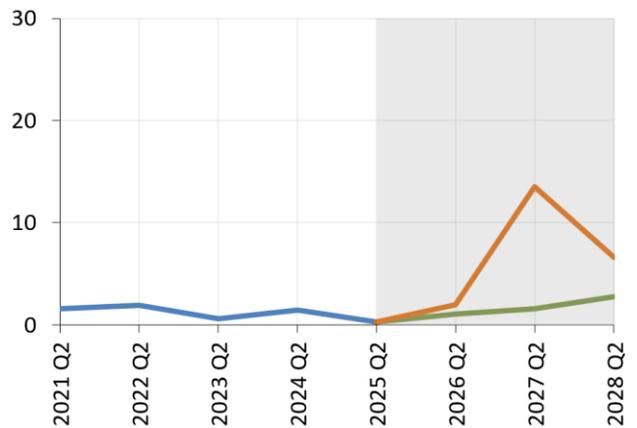
NII in National Currency to Interest-Bearing Assets, %
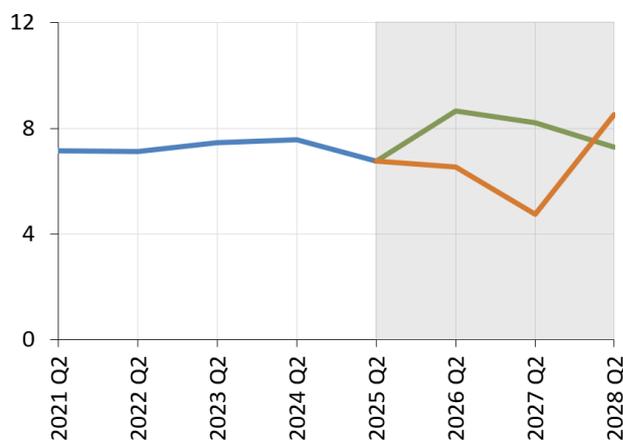
NII in FX to Interest-Bearing Assets, %
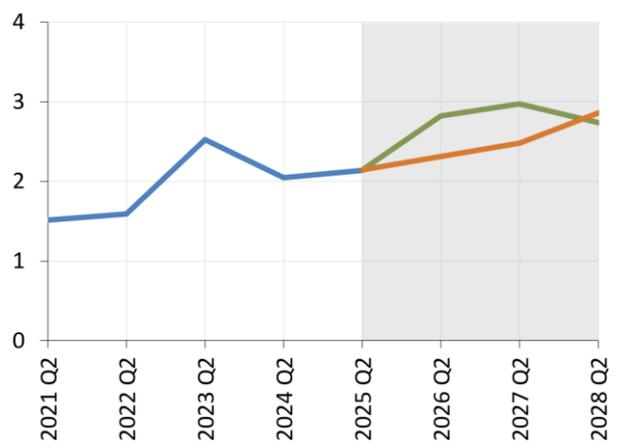
History — Baseline — Adverse

Source: CBU staff calculations.

Figure 139. Macroeconomic Scenarios[103]

NII in National Currency, trillion UZS
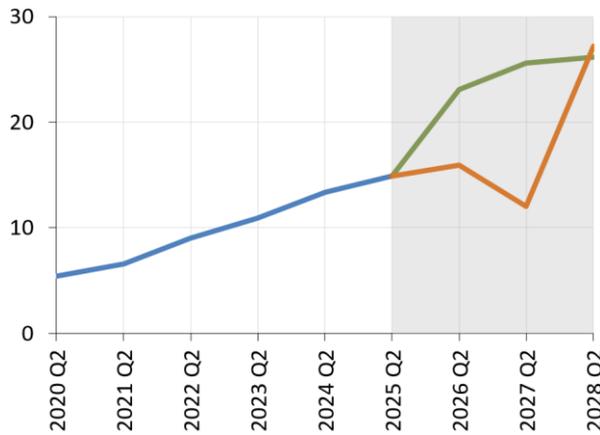
NII in FX, trillion UZS
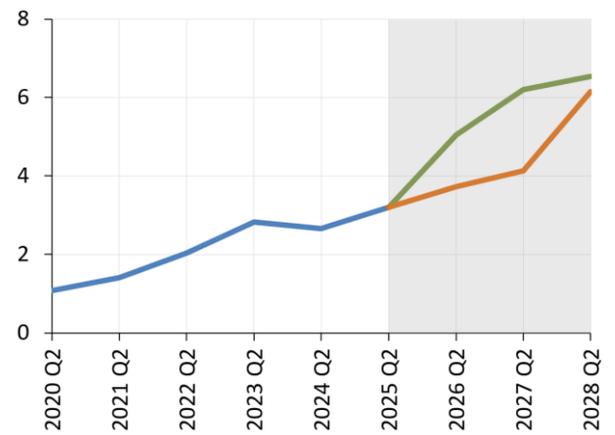
NNII, trillion UZS
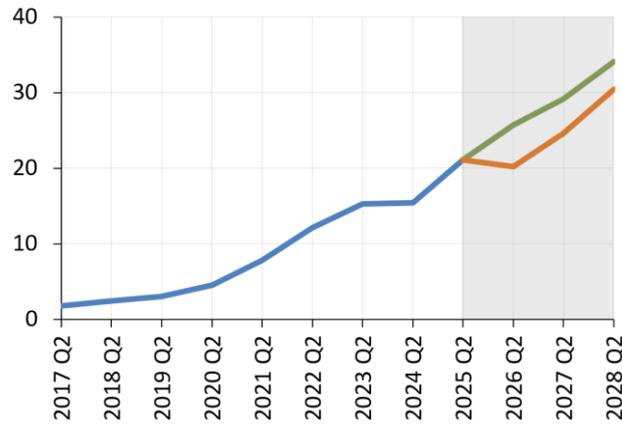
NNII to Total Assets, %
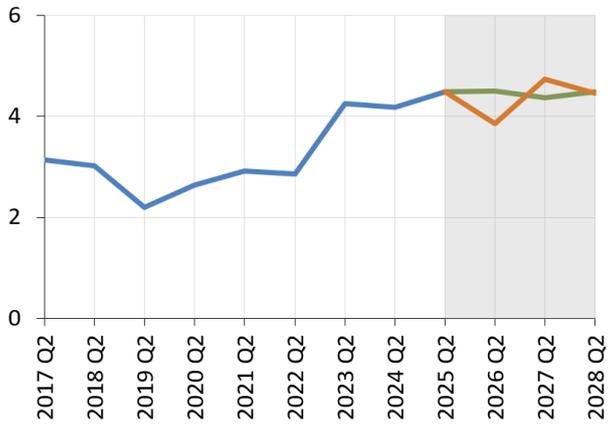
Annual Growth of Interest-Bearing assets, %
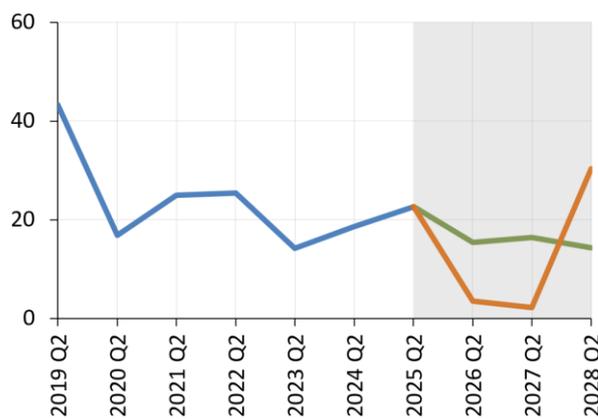
Operating Expenses, trillion UZS
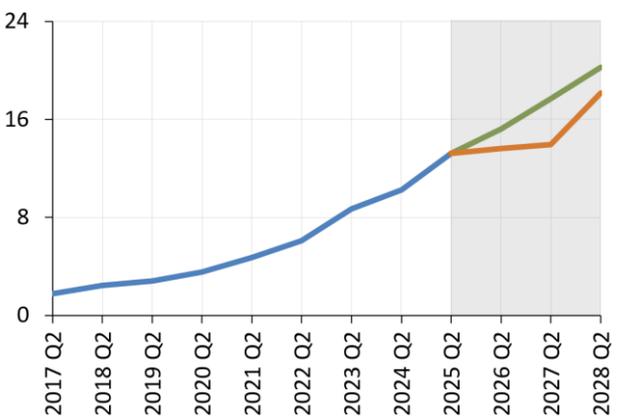
— History — Baseline — Adverse

Source: CBU staff calculations.

---

[103] Macroeconomic scenarios do not constitute forecasts of indicators. The scenarios address high-level risks, known as tail risks, which have a very low probability of occurrence. The tail risks were developed to create adverse scenarios and assess the resilience of banks in Uzbekistan to the shocks.

Banks' NII in FX is expected to increase. The low-interest rate environment, combined with a reduction in FX interest expenses due to lower credit rates, will lower the cost of loan financing. Taking this into account, results from the satellite model under the adverse scenario indicate that NII in FX is estimated to rise by the end of H1 2028.

NNII of banks is formed depending on changes in economic activity. Under the adverse scenario, increased risks may lead to a reduction in banking services, while economic recovery may increase NNII through higher demand for banking services. In the adverse scenario, the ratio of NNII to total assets in the banking system may decline to 3.9% by the end of H1 2026 and then rise to 4.7% in the corresponding period of 2027. In addition, in H1 2028, the volume of NNII in the banking system is expected to reach 30 trillion UZS.

Interest-bearing assets will increase due to lower loan losses. Under the adverse scenario, credit growth decelerates as a result of declining economic activity and reduced demand for credit. As economic growth recovers under the adverse scenario, credit growth is expected to return to previous levels. In addition, due to the decrease in credit risk, interest-bearing assets in the banking system may grow by up to 30% annually by the end of H1 2028. Under the baseline scenario, given the continuation of existing economic trends in the country, the annual growth rates of both credit and interest-bearing assets are expected to remain within their historical ranges.

5.2. Solvency Macro Stress Test

The results of the macro stress test under the adverse scenario showed that banks' solvency may decline. Banks' capital adequacy was assessed through a "top-down" macro stress test on solvency[104] under both the baseline and adverse scenarios. By the end of H1 2028, capital adequacy ratios (CET1 and CAR) may increase under the baseline scenario but fall below the regulatory minimum requirement under the adverse scenario.

Figure 140. Macro Stress Test Results on CET1 Capital Ratio
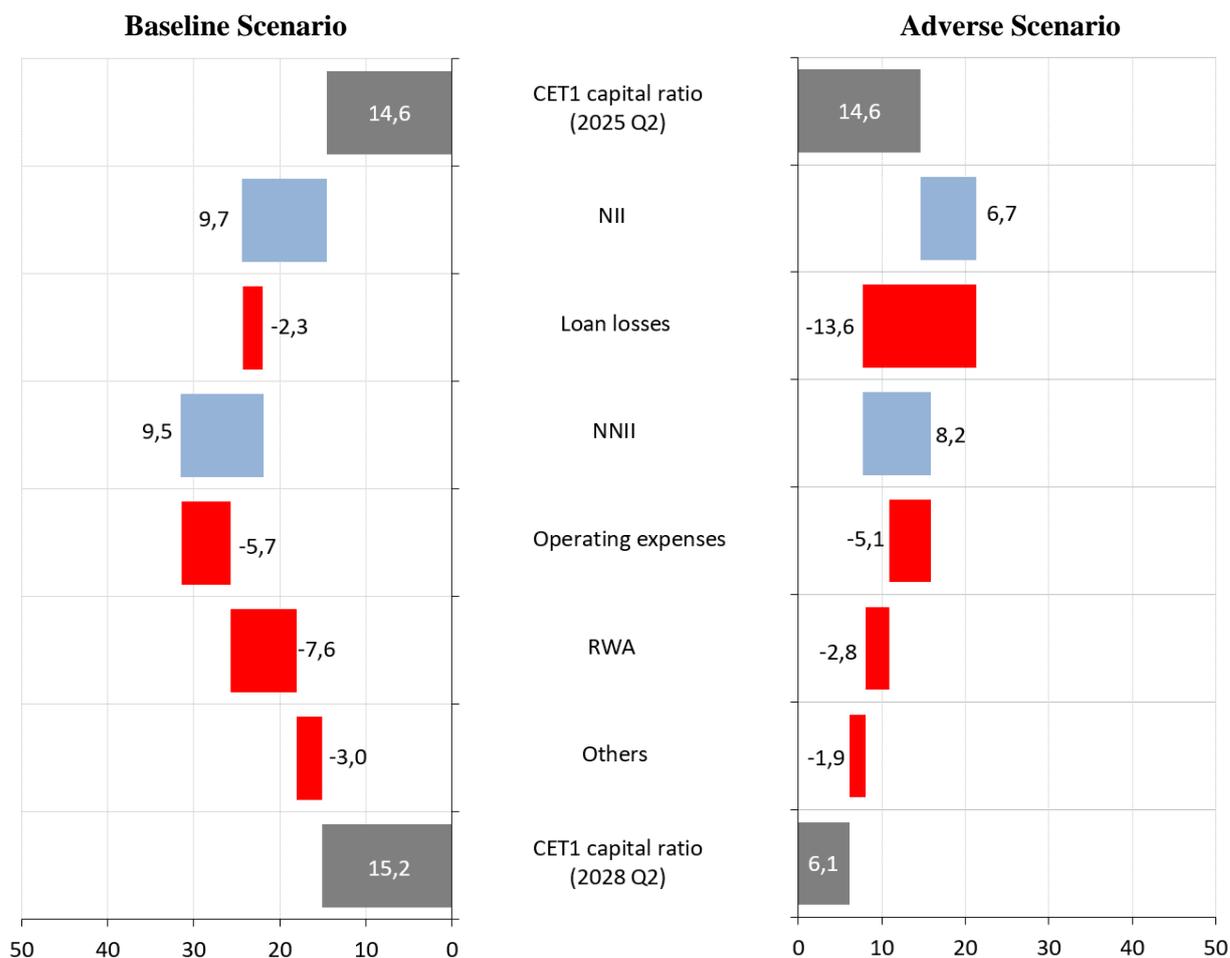
Source: CBU staff calculations.

Note: Other exposures in the macro stress test include losses on securities, FX revaluation, losses on real estate, taxes and dividends.

---

[104] The "top-down" macro stress-test tool is an instrument for assessing the stability of the banking system based on macroeconomic scenarios. In doing so, the same scenarios, assumptions and models are used for all banks.

In the baseline scenario, the higher profitability observed under conditions of low credit losses increases the CET1 capital ratio by 0.6 p.p. As of July 1, 2028, the positive contributions of NII and NNII to the CET1 capital ratio are 9.7 p.p. and 9.5 p.p., respectively. At the same time, the increase in RWA reduces the CET1 capital ratio by 7.6 p.p., while operating expenses and loan losses reduce it by an additional 8 p.p.

In the adverse scenario, high loan losses are one of the main factors reducing the CET1 capital ratio. By the end of H1 2028, the CET1 capital ratio is expected to decline to 6.1%, reflecting the negative impact of loan losses, which amount to 13.6 p.p. In addition, operating expenses reduce the CET1 ratio by 5.1 p.p., while NII and NNII have a combined positive contribution of 14.9 p.p.

The CAR increases due to higher profitability in the baseline scenario. By the end of H1 2028, the positive contribution of NII to the CAR may reach 11.5 p.p., while the positive contribution of NNII may reach 11.1 p.p. In addition, due to the expected increase in banking system assets, RWA may reduce the CAR by 8.7 p.p.

Figure 141. Macro Stress Test Results on CAR

Baseline scenario		Adverse scenario
17,4	CAR (2025 Q2)	17,4
11,5	NII	8,6
-1,6	Loan losses	-16,3
11,1	NNII	9,4
-6,6	Operating expenses	-5,7
-8,7	RWA	-2,7
-3,8	Others	-2,3
19,3	CAR (2028 Q2)	8,4
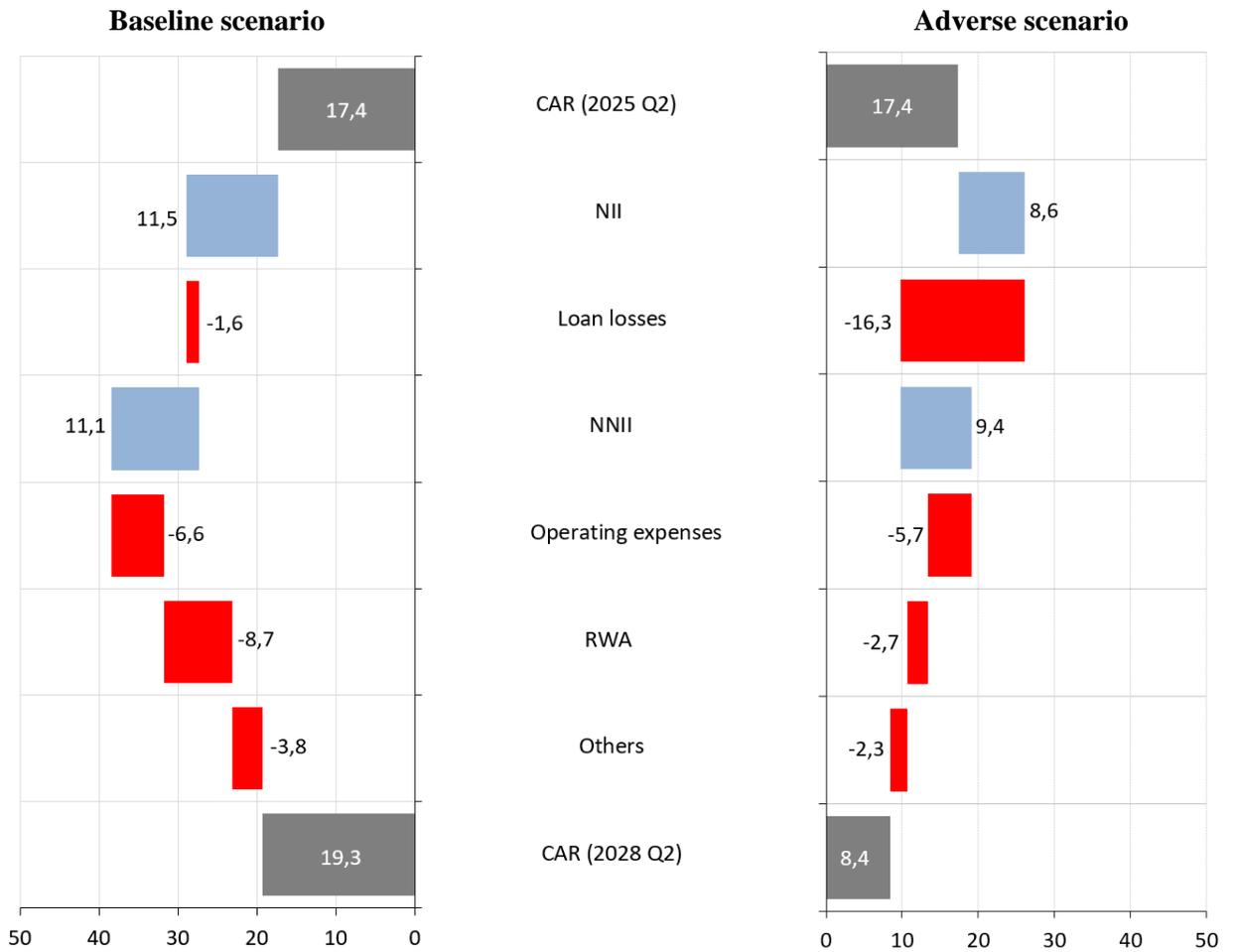
Source: CBU staff calculations.

In the adverse scenario, the CAR may decline by 4.6 p.p. from the minimum requirement. By the end of H1 2028, loan losses have a negative impact of 16.3 p.p. on the CAR, operating expenses 5.7 p.p., and RWA and other factors 5 p.p. A positive contribution of 18 p.p. from NII and NNII is expected to partially offset the losses in CAR.

Figure 142. Macro Stress Test Results on Capital Adequacy, %

CET1 Capital Ratio

14,6
14,8
14,4
15,2
13,6
8,1
6,1

2025 Q2   2026 Q2   2027 Q2   2028 Q2

CAR

17,4
18,5
19,0
19,3
18,3
10,0
8,4

2025 Q2   2026 Q2   2027 Q2   2028 Q2

—○— Baseline   —○— Adverse
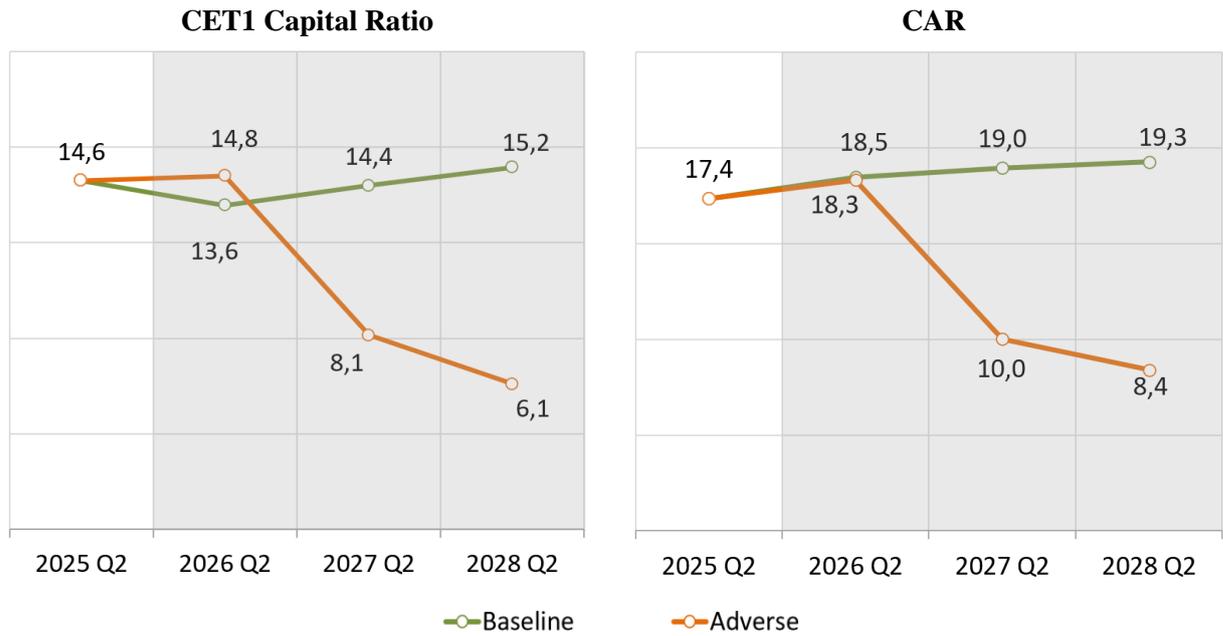
Source: CBU staff calculations.

Under the adverse scenario, internal and external risks affect the solvency of the banking system with a certain lag. By the end of H1 2028, CET1 capital ratio and CAR are expected to show an increasing trend under the baseline scenario and a decreasing trend under the adverse scenario. In particular, as of July 1, 2028, the CET1 capital ratio and CAR may decline by 8.5 p.p. and 9 p.p., respectively, compared to the end of H1 2025.

Figure 143. Distribution of Banking Sector's CAR Intervals and Shares in Total Assets, % (as of July 1, 2028)
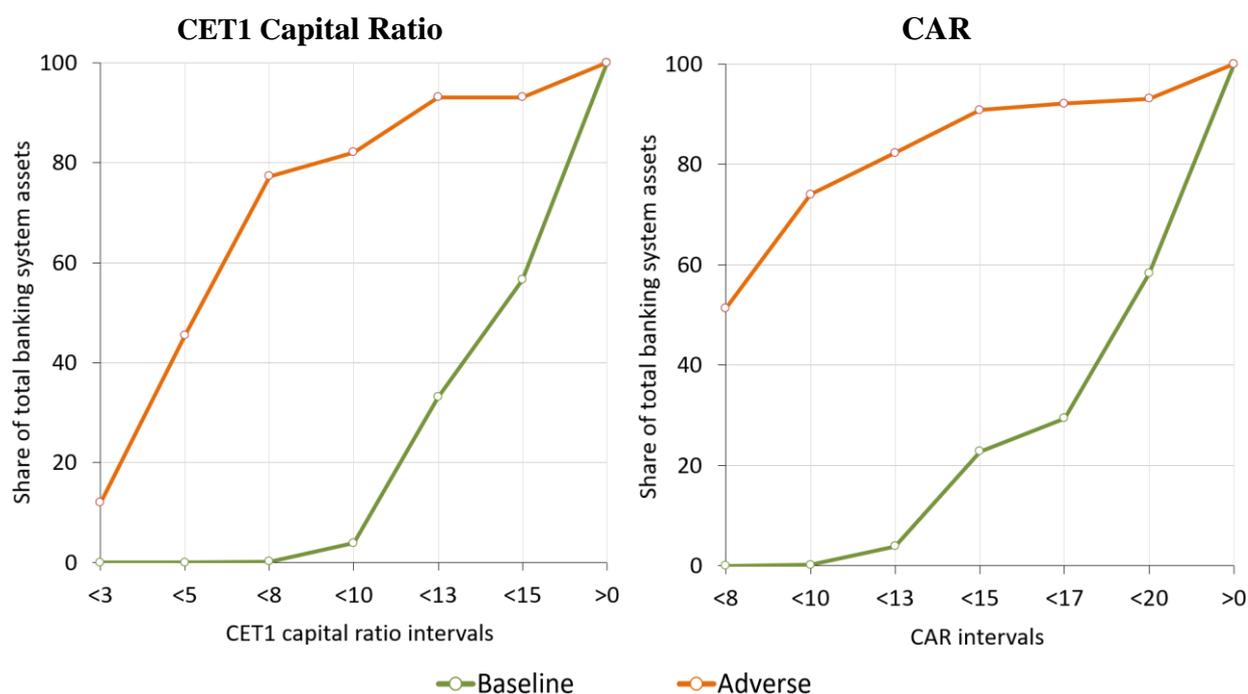
Source: CBU staff calculations.

Note: The cumulative order is used to set the shares of total assets of banks located within specific CAR intervals.

Under the baseline scenario, solvency weaknesses may occur only in a few small banks. By the end of H1 2028, the share of banking system assets in which the CAR falls below the established minimum requirement under the baseline scenario is projected to be 4%.

In adverse scenario, a high proportion of banks struggling to meet minimum capital requirements could increase the likelihood of structural systemic risks. As of July 1, 2028, the share of banks whose CET1 capital ratio falls below 8% in total banking system assets is projected to be 77%. Meanwhile, the assets of banks that may have difficulty meeting the 13% minimum requirement for the CAR account for 82% of total banking system assets.

Figure 144. Bank-by-Bank Macro Stress Test Results, % (As of July 1, 2028)
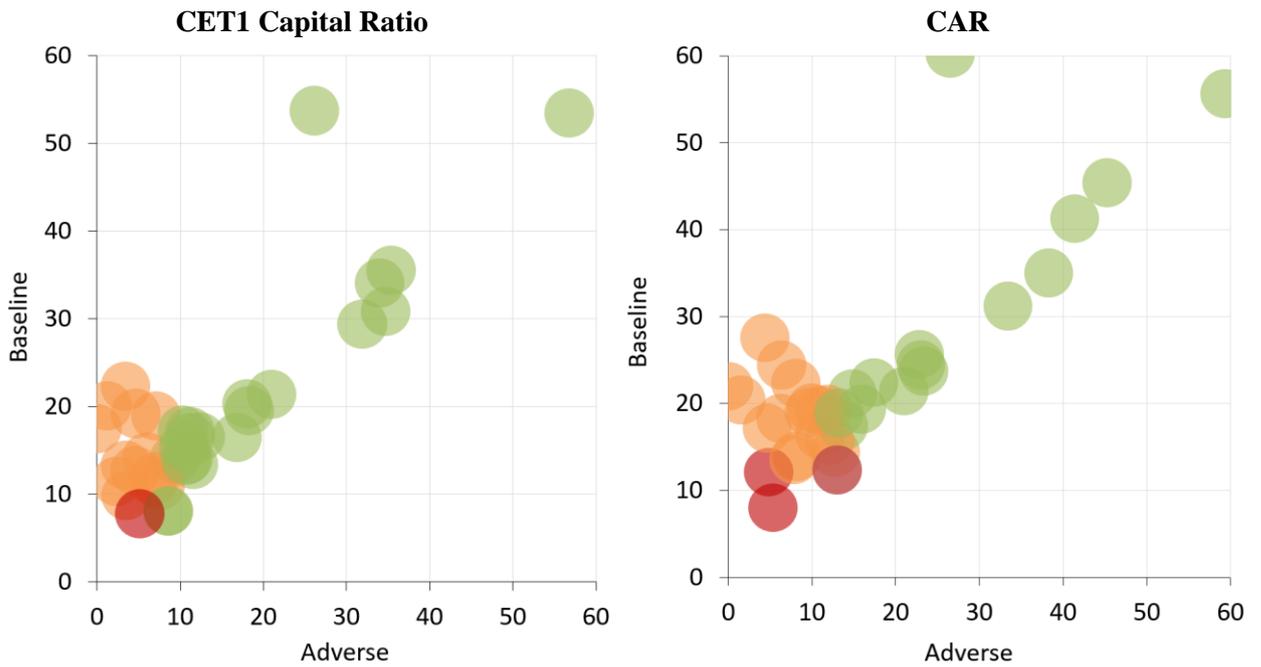
Source: CBU staff calculations.

Note: The graph presents data on banks, each depicted by a bubble, showing their CAR and CET1 capital ratios within the 0–60% range. Banks are color-coded: a green bubble denotes a bank that satisfies the minimum CAR requirement of 13% and CET1 capital ratio requirement of 8% in both the baseline and adverse scenarios; a light red bubble represents a bank that falls short of these thresholds in the adverse scenario; and a dark red represents a bank that falls short of these thresholds in the baseline scenario.

In the baseline scenario, there were no solvency issues among D-SIBs. By the end of H1 2028, the CET1 capital ratio of one bank under the baseline scenario and 14 banks under the adverse scenario may fall below 8%. Similarly, the CAR may be below the minimum requirement for three banks under the baseline scenario and 18 banks under the adverse scenario.

Figure 145. Leverage Ratio of Banking Sector in Baseline and Adverse Scenarios, %
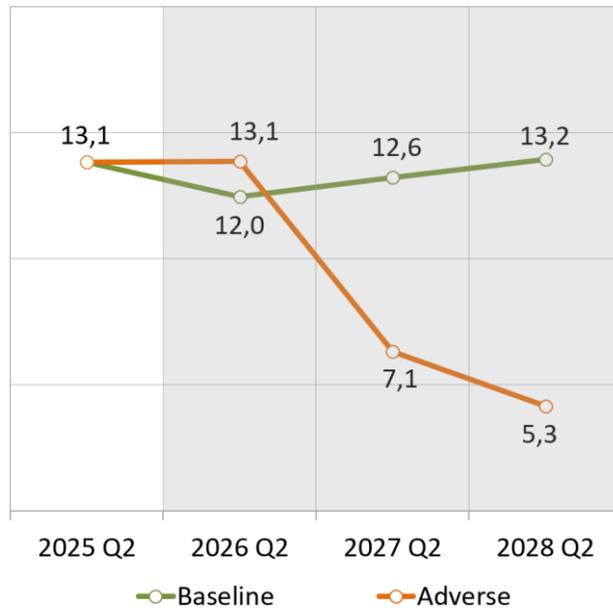
Figure 146. Bank-by-Bank Leverage Ratio, % (as of July 1, 2028)
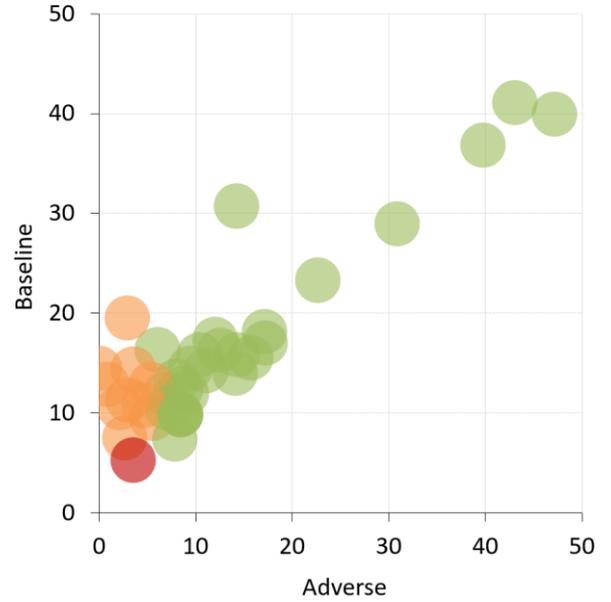
Source: CBU staff calculations.

Note: The graph presents data on banks, each depicted by a bubble, showing their leverage ratios within the 0–50% range. Banks are color-coded: a green bubble denotes a bank that satisfies the minimum leverage requirement of 6% in both the baseline and adverse scenarios; a light red bubble represents a bank that falls short of these thresholds in the adverse scenario; and a dark red represents a bank that falls short of these thresholds in the baseline scenario.

Under the adverse scenario, a deterioration in the quality of capital relative to total assets may be observed. By the end of H1 2028, the banking system's leverage ratio may fall to 5.3% under the adverse scenario. Under the baseline scenario, the leverage ratio is expected to remain above the minimum requirement of 6% throughout the three years following the H1 2025. Additionally, as of July 1, 2028, one bank under the baseline scenario and 11 banks under the adverse scenario may fail to meet the minimum leverage requirement.

In adverse scenario, a higher amount of additional capital is required to ensure capital adequacy. As of July 1, 2028, banks under the adverse scenario will need to raise additional capital equivalent to 3.8% of GDP to meet the minimum requirement for the CAR. In the baseline scenario, banks that may struggle to meet the CAR will require a smaller amount of additional capital.

Figure 147. Additional Capital to GDP in Adverse Scenario, %
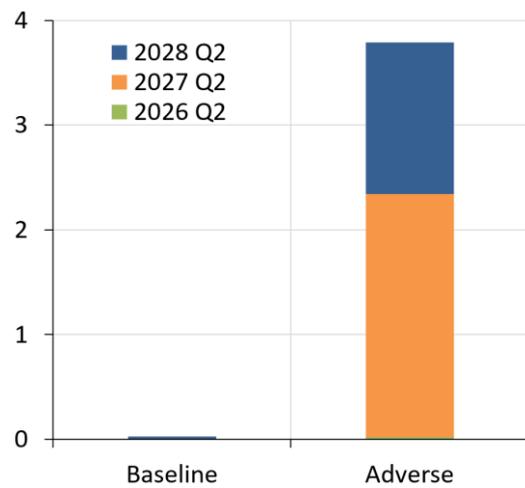
Figure 148. Banking Sector ROA in Adverse Scenario, %
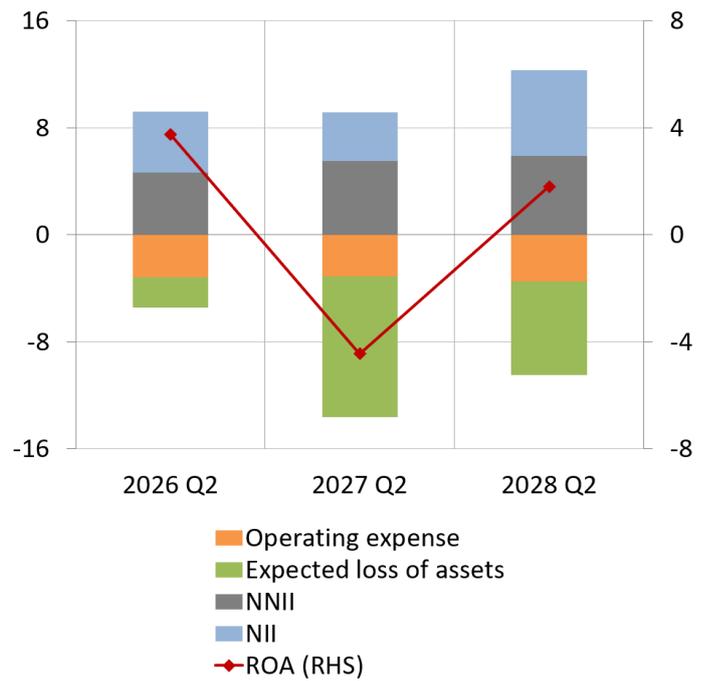
Source: CBU staff calculations.

An increase in credit risk reduces banks' profitability. In H1 2027, under the adverse scenario, despite higher growth in NII and NNII relative to assets, the banking system's ROA may be negative due to high expected loan losses. By the end of H1 2028, potential asset losses – reduced as a result of a lower PD in the loan portfolio – along with operating expenses, which remain nearly unchanged relative to bank assets, are expected to be covered by NII and NNII. As a result, the ROA is projected to recover to 1.8% under the adverse scenario as of July 1, 2028.

According to the adverse scenario, contagion risk to the banking system remains low. It is assumed that, in the adverse scenario, the lower the CAR and CET1 capital ratios of a bank with a high PD due to failure to meet minimum capital requirements, the higher the risk of contagion. In particular, due to contagion risk arising from losses-tied-to-capital[105], four banks may fail to meet the minimum capital requirements.

Figure 149. Contagion Risk: Bank Default Losses Tied to Capital (as of July 1, 2028)
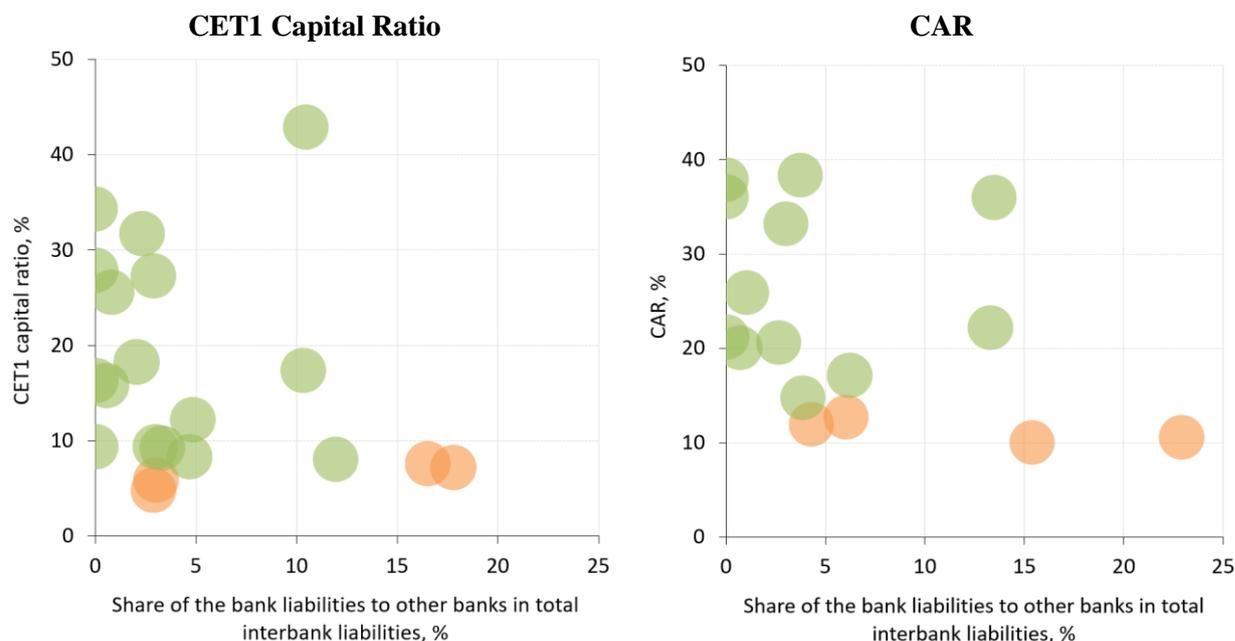
Source: CBU staff calculations.

Note: The graph presents an analysis of various banks, categorized based on three criteria: those with a CAR and CET1 ratio below 50%, those with liabilities to other banks, and those that meet the minimum CAR of 13% and CET1 of 8% under the adverse scenario. Banks that comply with the minimum capital adequacy requirement are denoted by green bubbles, whereas light red bubbles indicate banks that fail to meet this threshold.

---

[105] In the approach, where losses from bank defaults are tied to capital, the extent of banks' losses from contagion risk is influenced by the defaulting bank's CAR. The lower the failing bank's CAR, the greater the proportional losses incurred by banks that have financial connections with it, such as those that have provided loans to or placed deposits with the defaulting bank.

The contagion risk may be relatively higher in the presence of unrecoverable losses[106].
Under the adverse scenario, banks that fail to meet the minimum CET1 capital requirement may
undermine the solvency of six banks. In addition, under the adverse scenario, a decline in banks
whose CAR falls below the minimum requirement may result in five banks facing difficulties in
meeting capital adequacy requirements.

Figure 150. Contagion Risk: Uncoverable Bank Default Losses (as of July 1, 2028)
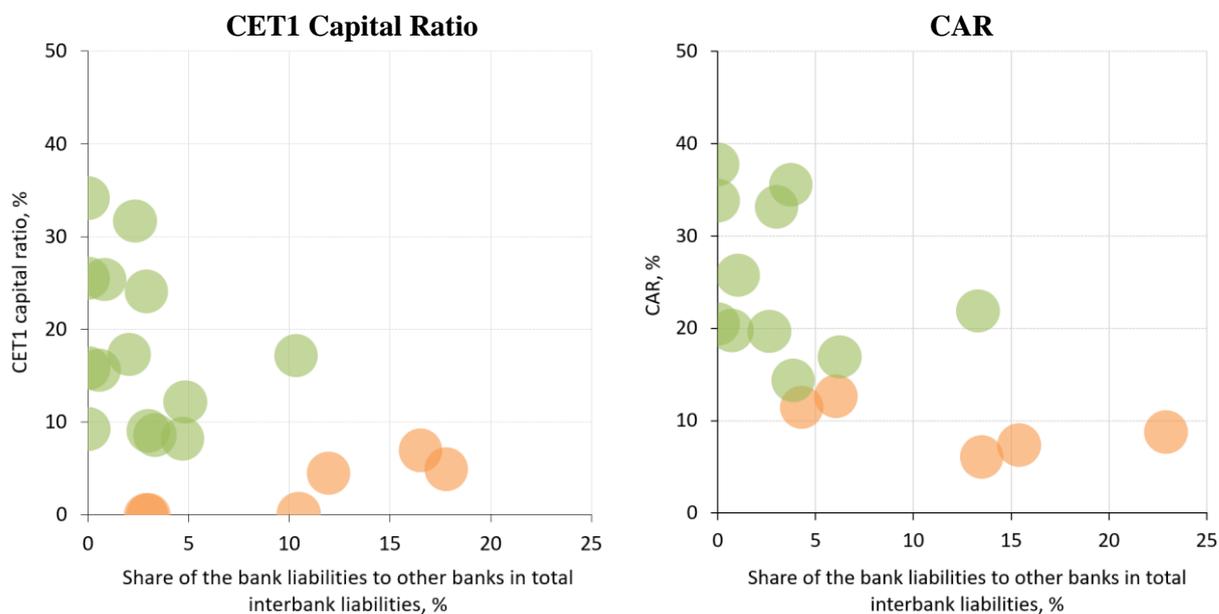
Source: CBU staff calculations.

Note: The graph presents an analysis of various banks, categorized based on three criteria: those with a CAR and
CET1 ratio below 50%, those with liabilities to other banks, and those that meet the minimum CAR of 13% and CET1
of 8% under the adverse scenario. Banks that comply with the minimum capital adequacy requirement are denoted by
green bubbles, whereas light red bubbles indicate banks that fail to meet this threshold.

---

[106] In the approach, where losses from bank defaults are not recoverable, banks face the loss of all their loans to or deposits placed
with a bank with a high probability of default, i.e., a bank with the CAR below the required minimum.

The banking system's resilience to loan concentration and residential property price corrections was evaluated through additional shocks to the adverse scenario. The impact on banks' solvency from asset losses arising from the default of the largest borrower in each bank's loan portfolio was analyzed, assuming that 50% of loans extended to largest defaulting borrowers are unrecoverable. In addition, the impact of an increase in PD in the mortgage portfolio due to loan default resulting from 30% and 50% declines in residential property prices in the real estate market was assessed.

Figure 151. Macro Stress Test Results with Concentration Risk, %
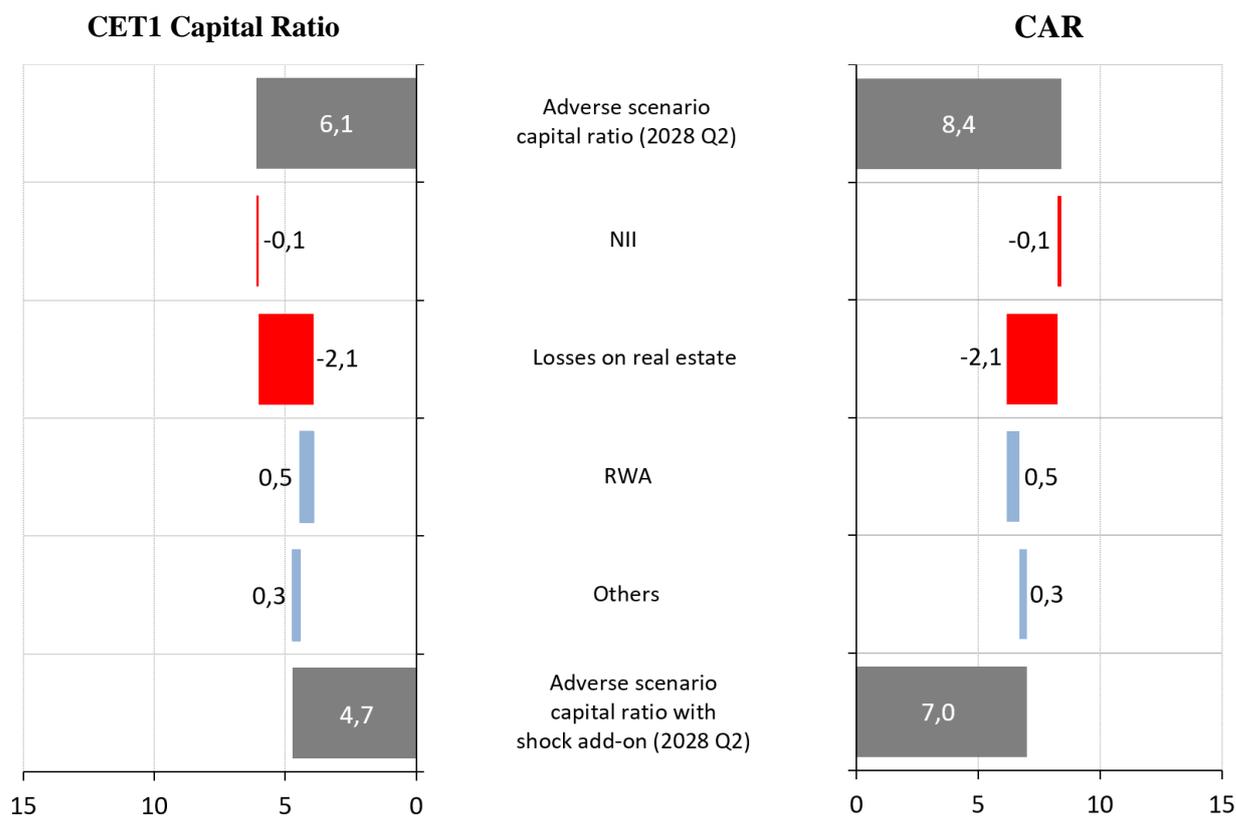
Source: CBU staff calculations.

Note: The default of single largest borrower in each bank is taken into account as concentration risk.

The results of the stress test on concentration risk indicate a significant decline in CAR and CET1 capital ratios. In particular, as a result of the default of each bank's largest borrower, by the end of H1 2028, the CET1 capital ratio and CAR may decrease to 4.7% and 7%, respectively. In this scenario, the negative impact of large borrower defaults on capital ratios is 2.1 p.p., while the positive effect of the reduction in RWA due to loan losses is 0.5 p.p.

Figure 152. LTV Distribution of Mortgages after Shocks in Real Estate Market, H1 2026
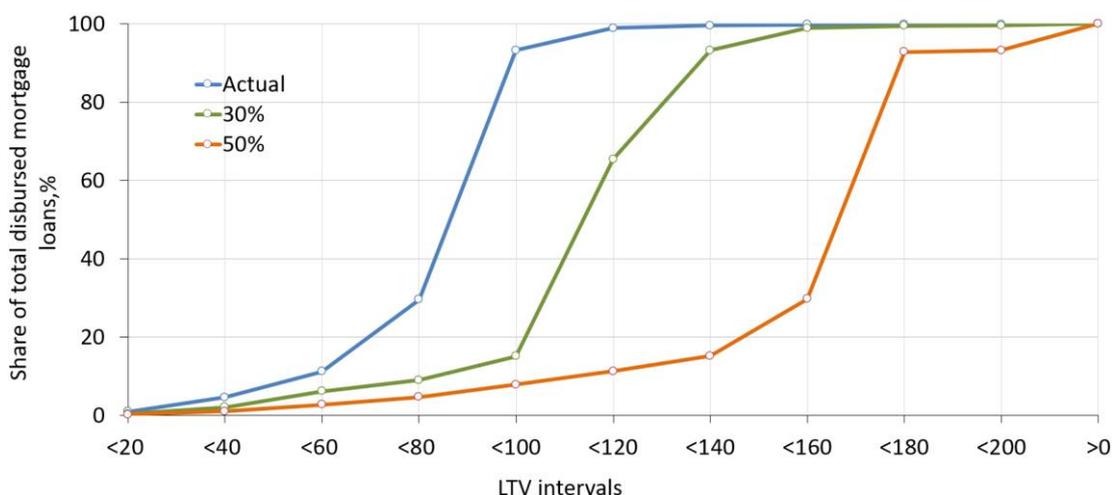
Source: CBU staff calculations.

Note: The shares of loans in LTV ranges in total mortgages are set in cumulative order.

The impact of declining residential property prices on banks' solvency was evaluated. It was assumed that, as a result of falling prices of residential properties, borrowers with an LTV ratio above 120% may fail to repay their mortgages. In this scenario, potential adverse developments in the real estate market would lead to loan losses for banks and undermine the overall solvency of the banking system.

Declining real estate prices increase the credit risk associated with mortgages. A 30% drop in residential property prices would result in 85% of mortgages issued in H1 2025 being inadequately collateralized, with the share of loans having an LTV above 120% rising to 35%. A 50% decline in residential property prices would lead to 92% of mortgages issued in H1 2025 having loan amounts exceeding the collateral value. Moreover, under a 50% price decline, 89% of mortgages would have a higher probability of forfeiting the collateral than repayment due to an LTV exceeding 120%.

Figure 153. Macro Stress Test Results with 30% Decline in Real Estate Market Prices, %

CET1 Capital Ratio		CAR

	CET1	CAR
Adverse scenario capital ratio (2028 Q2)	6,1	8,4
NII	-0,1	-0,1
Losses on real estate	-1,2	-1,8
RWA	0,3	0,5
Others	0,2	0,3
Adverse scenario capital ratio with shock add-on (2028 Q2)	5,3	7,3
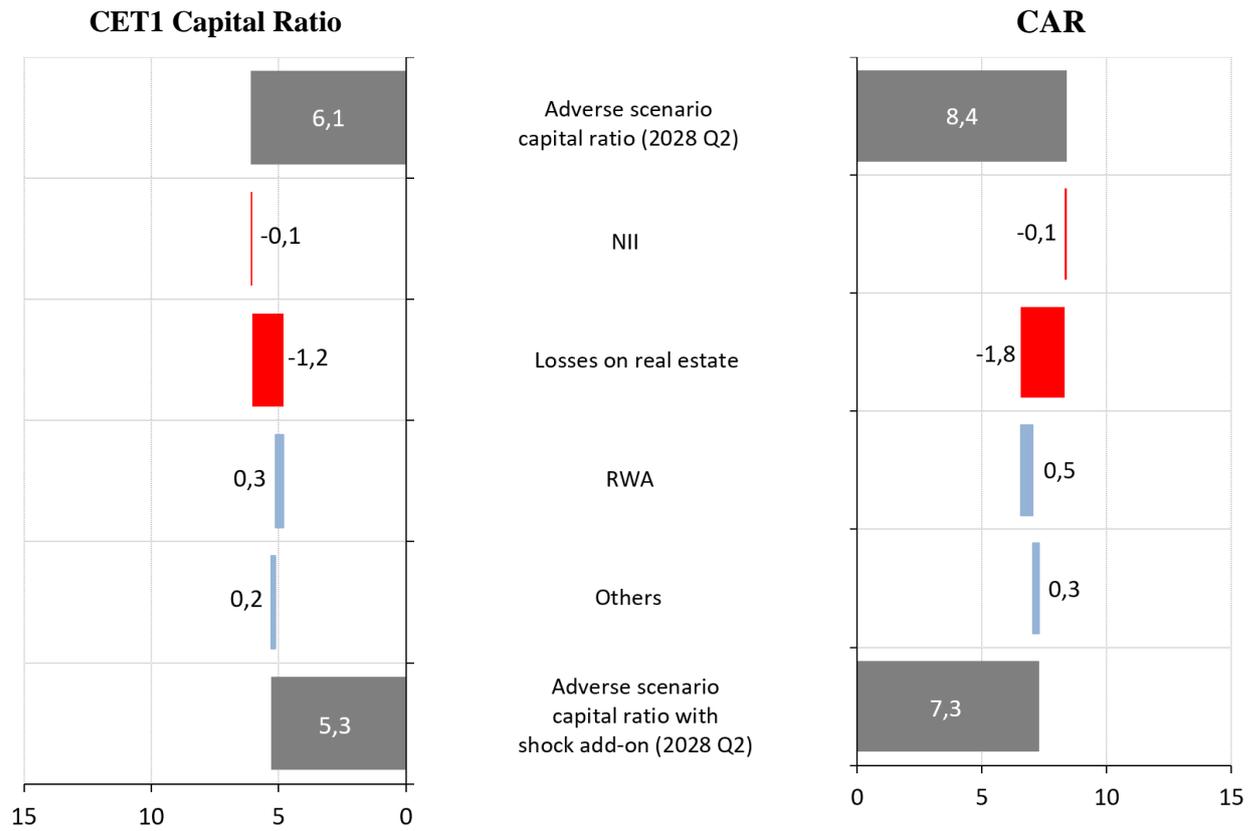
Source: CBU staff calculations.

Under the adverse scenario, a 30% decline in residential property prices is expected to have a limited impact on banking system's solvency. By the end of H1 2028, the PD for the total loan portfolio may rise by 1.3 p.p. due to the housing price drop. Losses on mortgages resulting from the increased credit risk could reduce the CET1 capital ratio to 5.3% and CAR to 7.3%.

Figure 154. Macro Stress Test Results with 50% Decline in Real Estate Market Prices, %
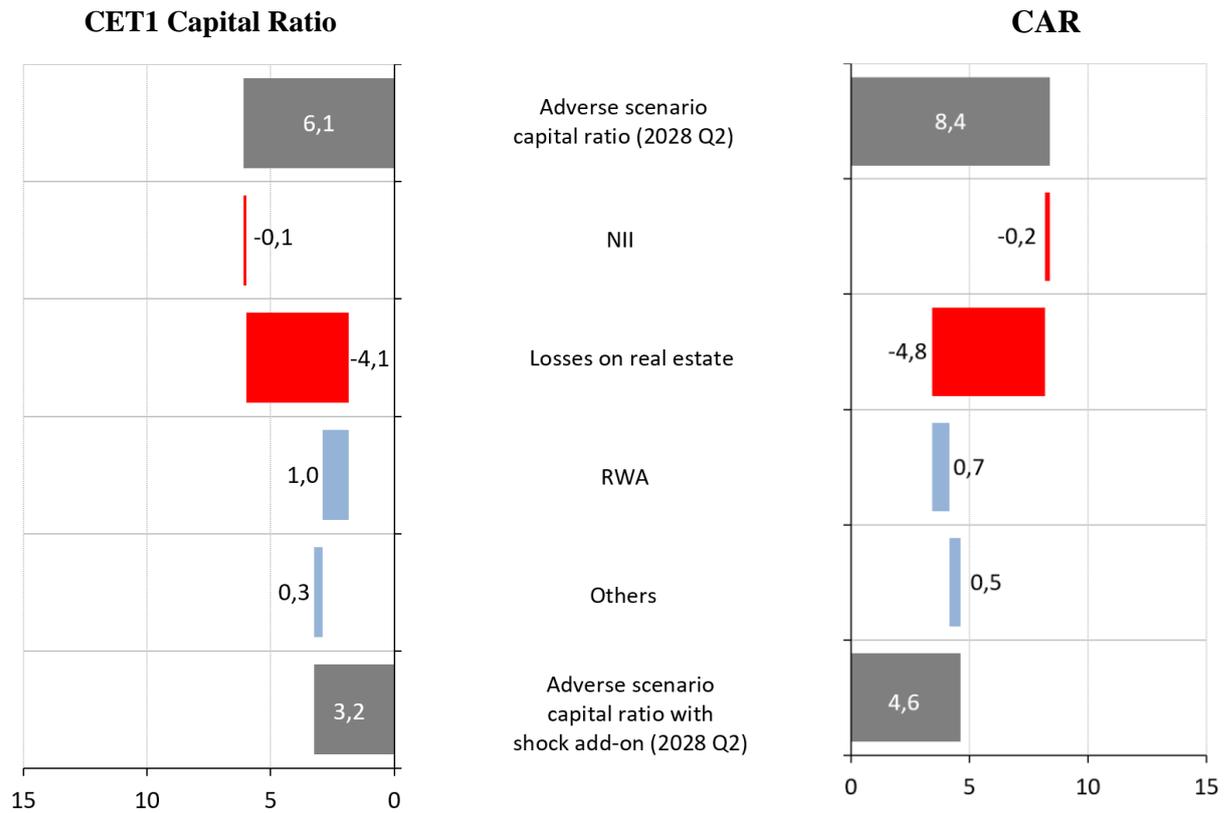
Source: CBU staff calculations.

A 50% drop in real estate prices reduces capital adequacy. By the end of H1 2028, under the adverse scenario, a 50% decline in residential property values increases the PD of the mortgage portfolio by 27 p.p.. In this scenario, losses on real estate exert a 4.1 p.p. negative impact on the CET1 capital ratio and a 4.8 p.p. negative impact on the CAR due to the higher PD of the loan portfolio. Additionally, losses on mortgages reduce RWA and lower banks' NII. Consequently, as of July 1, 2028, the CET1 capital ratio and CAR may fall to 3.2% and 4.6%, respectively, under the adverse scenario.

5.3. Liquidity Macro Stress Test

The liquidity of banks was assessed under both the baseline and adverse scenarios. In line with the recommendations of the Basel Committee, cash flows under the baseline scenario were analyzed over a one-year horizon using cash inflow and outflow factors. For the adverse scenario, the assessment incorporated heightened internal and external economic uncertainties, depreciation of UZS, and higher cash outflows alongside lower cash inflows compared to the baseline scenario, as reflected in the macro stress test[107] (Appendix 4).

Figure 155. Structure of Banking System's Assets and Liabilities by Terms, %
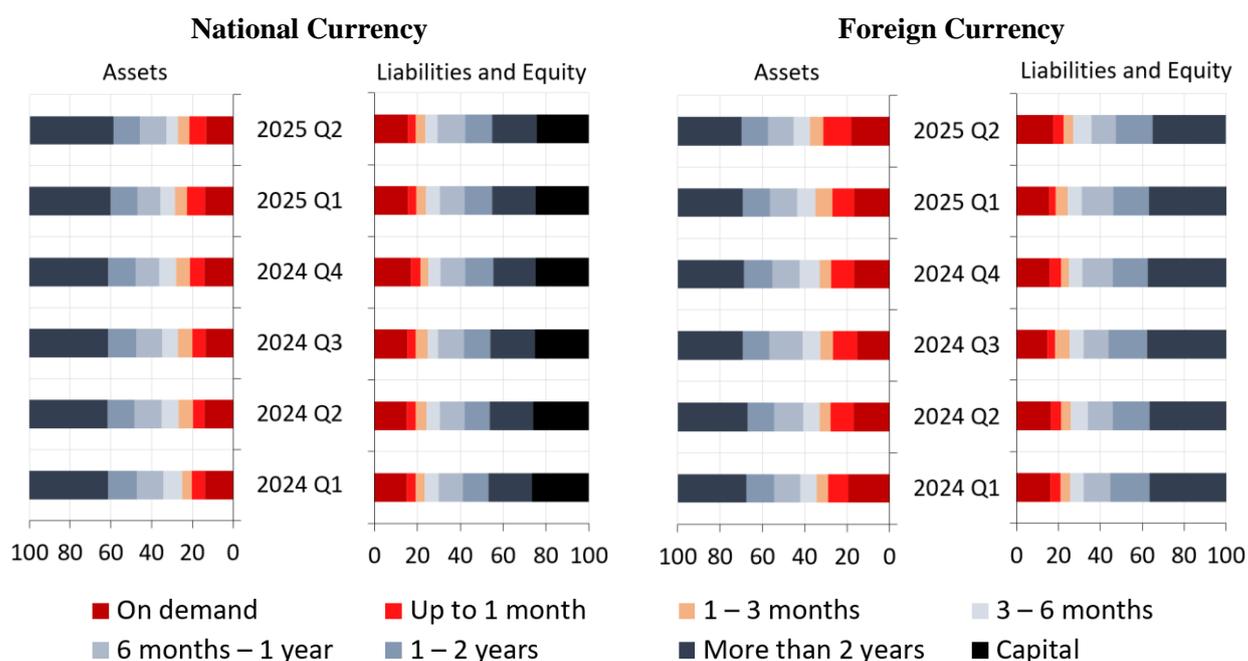
Source: CBU staff calculations.

Note: Total liabilities and total equity constitute the passive portion of the bank's balance sheet.

Short-term assets in UZS exceeded short-term liabilities in the banking system. As of July 1, 2025, short-term assets up to one year represented 46% of banking system assets in UZS, while short-term liabilities comprised 42% of capital and liabilities. Consequently, a stable condition is observed within the banking system regarding the coverage of short-term liabilities by short-term assets in UZS.

The maturity mismatch between assets and liabilities in FX is low. Short-term FX liabilities account for 47% of total liabilities and capital, while 57% of FX assets are short-term. This maturity structure mitigates liquidity risk by ensuring adequate coverage for the timely fulfillment of short-term FX obligations.

---

[107] Liquidity macro stress test methodology is presented in the Financial Stability Report for H1 2024.

Figure 156. Net Cash Inflow to Total Assets, % (As of July 1, 2026)
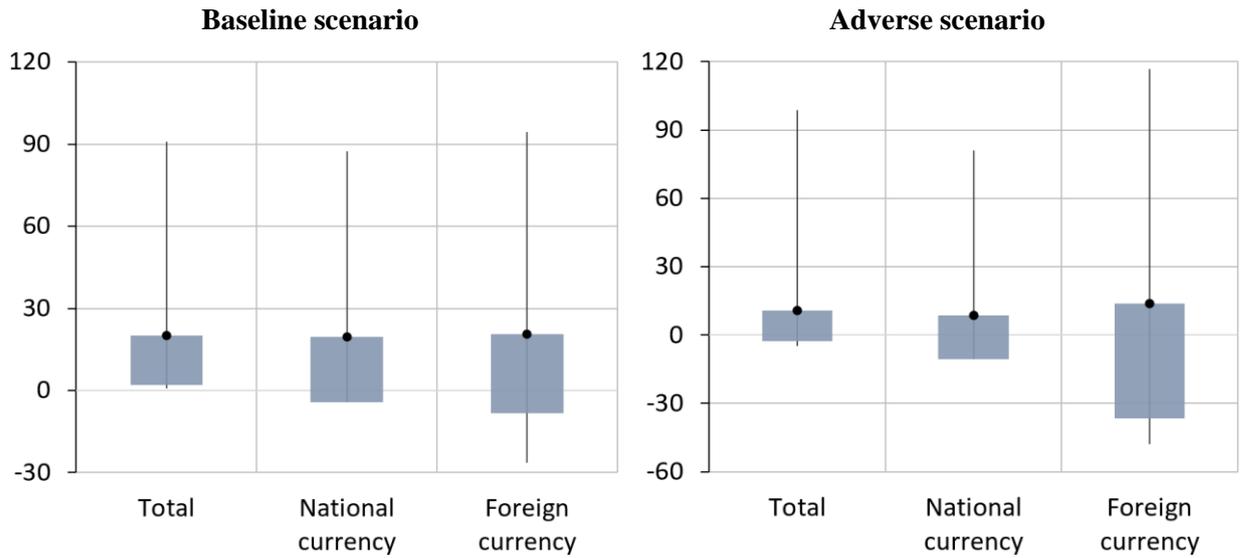
Source: CBU staff calculations.

Note: The rectangle displayed in the chart represents the variation between the value of the ratio of net cash inflow to assets by the end of H1 2026 according to the results of the liquidity macro stress-test for the banking system and the indicator of the bank with the minimum value of this ratio among banks. The length of the rectangle indicates the difference between the banking system performance and the minimum indicator. The vertical black line on the chart represents the maximum and minimum ratio of net cash inflow to total assets for one year until the end of H1 2026. Also, the black circle shows the ratio of net cash inflows to the assets at the end of H1 2026.

Under the baseline scenario, net cash inflows[108] across all banks in total currencies are projected to be positive. As of July 1, 2026, macro stress-test results indicated that net cash inflows could reach 20% of total assets in the banking system for both total and national currency, and 21% for FX. The largest potential net cash outflows observed in individual banks were -26% of assets in FX and -4% in UZS.

In adverse scenario, some banks may experience negative net cash inflow. Net cash inflows across the banking system could decline to 11% of total assets in total currencies and 9% in UZS. Meanwhile, net cash inflows in FX are expected to reach 14% of the banking system's assets in FX.

---

[108] Net cash inflow is the difference between cash inflows and cash outflows.

Figure 157. Bank-by-Bank Liquidity Stress Test Results: Total Currencies, % (as of July 1, 2026)
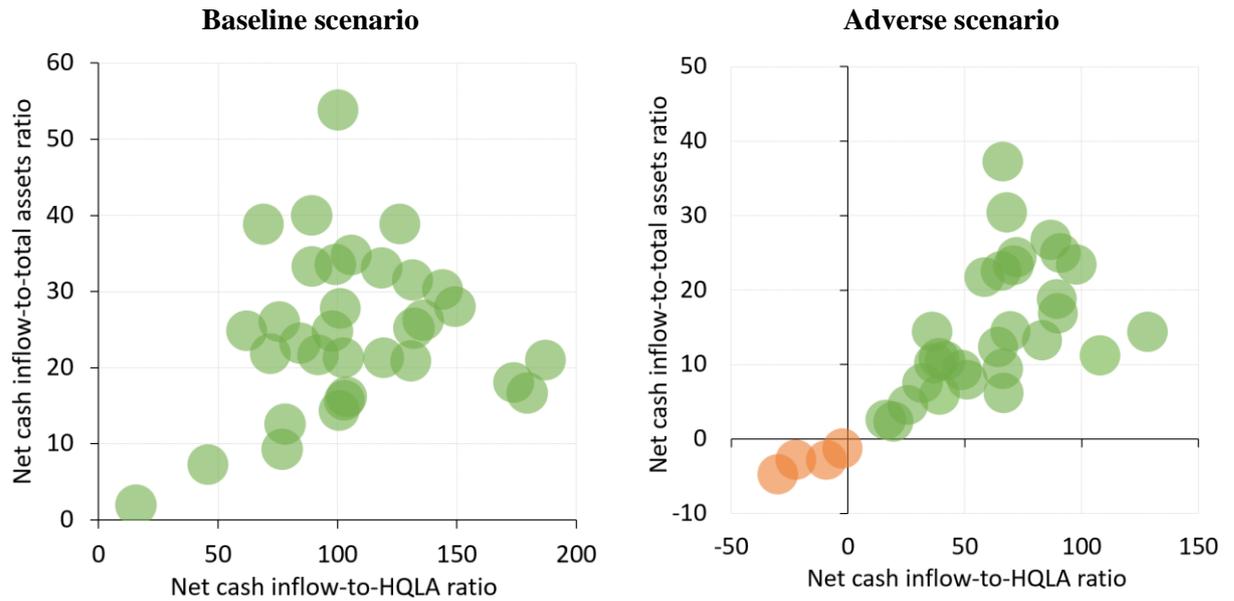
Source: CBU staff calculations.

Note: The graph presents data on banks, each depicted by a bubble, showing a ratio of net cash inflow to total bank assets within the 0–60%, and a ratio of net cash inflow to HQLA within the 0–200% under the baseline and adverse scenarios. Banks are color-coded: a green bubble denotes a bank with positive net cash inflows in UZS, whereas a light red bubble represents a bank with negative net cash inflows in UZS.

Banks do not face liquidity problems in total currency under the baseline scenario. It was determined that all banks will maintain a positive net cash inflow in total currency. Under the adverse scenario, the negative net cash inflow observed in some banks could amount to 1% of total assets and 5% of HQLA of the banking system.

Figure 158. Bank-by-Bank Liquidity Stress Test Results: UZS, % (as of July 1, 2026)
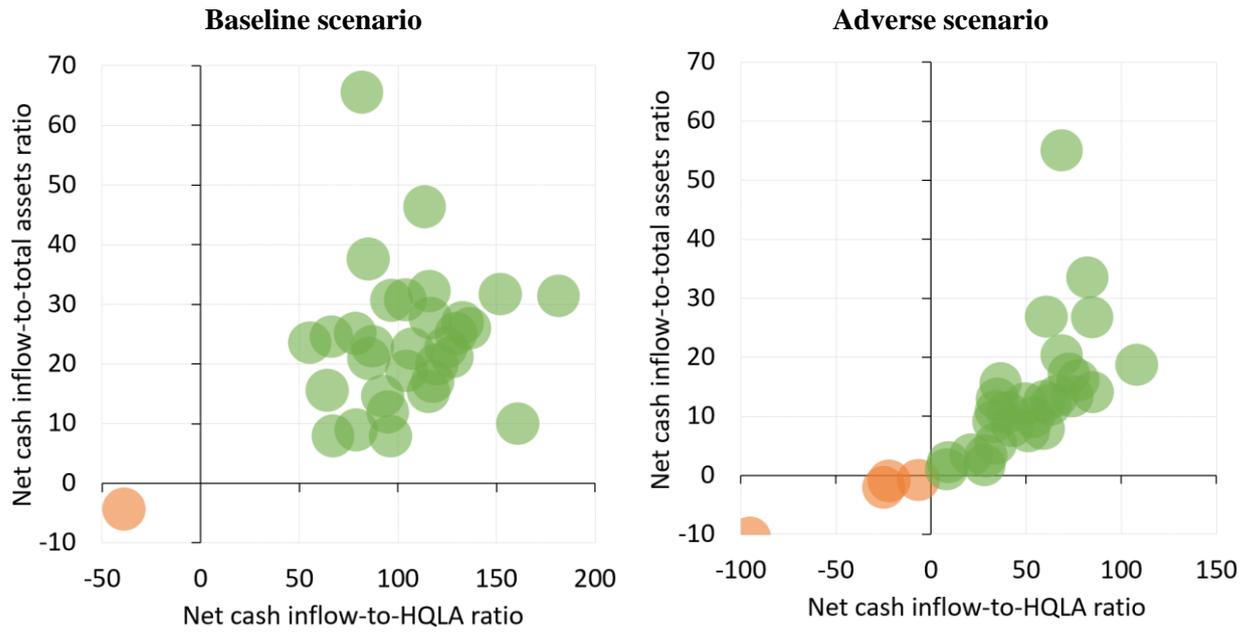
Source: CBU staff calculations.

Note: The graph presents data on banks, each depicted by a bubble, showing a ratio of net cash inflow to total bank assets within the 0–70%, and a ratio of net cash inflow to HQLA within the 0–200% under the baseline and adverse scenarios. Banks are color-coded: a green bubble denotes a bank with positive net cash inflows in UZS, whereas a light red bubble represents a bank with negative net cash inflows in UZS.

Under both the baseline and adverse scenarios, the liquidity in national currency remains stable in most banks. By the end of H1 2026, no liquidity pressures are expected under the baseline scenario. In the adverse scenario, the negative net cash inflow in UZS could reach up to 2% of the banking system's HQLA. However, the availability of sufficient HQLA to absorb these potential negative cash inflows mitigates liquidity risk across the banking system.

Figure 159. Bank-by-Bank Liquidity Stress Test Results: FX, % (as of July 1, 2026)
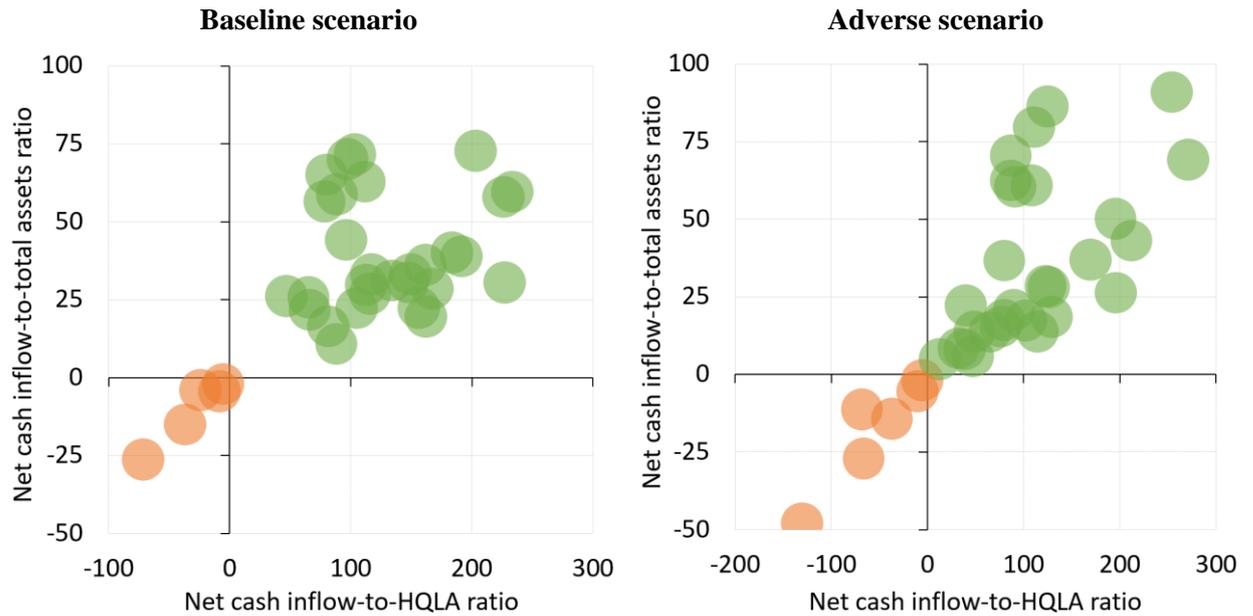
Source: CBU staff calculations.

Note: The graph presents data on banks, each depicted by a bubble, showing a ratio of net cash inflow to total bank assets within the 0–100%, and a ratio of net cash inflow to HQLA within the 0–300% under the baseline and adverse scenarios. Banks are color-coded: a green bubble denotes a bank with positive net inflows in FX, whereas a light red bubble represents a bank with negative net inflows in FX.

Liquidity shortfalls in FX may arise in some banks. Under the baseline scenario, the expected negative net cash inflow in certain banks could amount to up to 7% of the banking system's HQLA in FX, while under the adverse scenario this ratio could increase to 19%. Nevertheless, the availability of sufficient HQLA in FX to cover these potential negative cash inflows mitigates the risk of liquidity stress across the banking system.

The impact of deposit concentration risk on banks' liquidity was assessed by incorporating an additional shock into the adverse scenario. This analysis examined the potential liquidity risk arising from the withdrawal of funds by each bank's largest depositor. Accordingly, the adverse scenario was augmented by assuming the withdrawal of the largest depositor's funds in both UZS and FX from each bank's deposit portfolio.

Figure 160. Bank-by-Bank Share of Largest Depositor Funds, % (as of July 1, 2025)
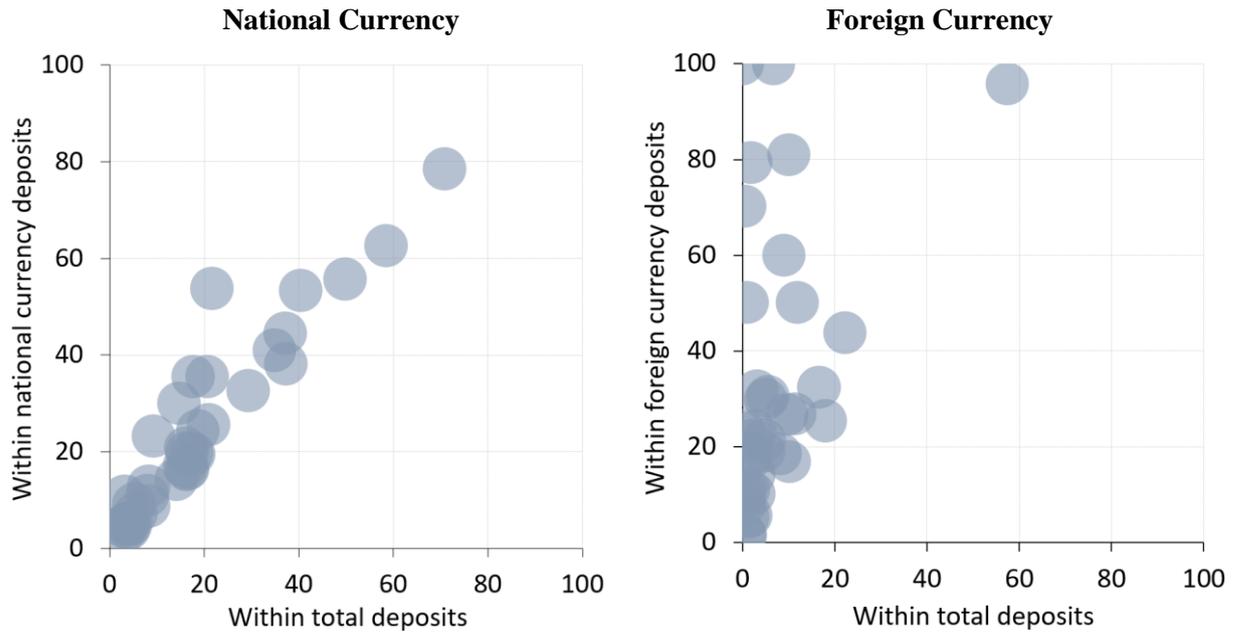
Source: CBU staff calculations.

Note: Depositors include legal entities and individuals.

Banks' deposit portfolios remain concentrated. The share of the largest depositor's funds in the UZS and FX deposit portfolios of some banks is high. As of July 1, 2025, the combined funds of the largest depositor in UZS accounted for 25% of total UZS deposits in the banking system[109] and 19% of the total deposit portfolio. In addition, the largest depositors in FX held 20% of FX deposits, equivalent to 5% of the banking system's total deposit portfolio. The total volume of deposits in the banking system amounted to 355.6 trillion UZS, of which 76%[110] were denominated in UZS, indicating elevated concentration risks in national currency deposits.

---

[109] The share of the largest depositors in the total deposits is defined as the ratio of the sum of the funds of the largest depositors to the deposit portfolio of the banking system.

[110] The Central Bank of the Republic of Uzbekistan. (2025). Statistical Bulletin for June 2025.

Figure 161. Bank-by-Bank Liquidity Stress Test Results: Impact of Largest Depositor Withdrawals on Banks in the Adverse Scenario, % (as of July 1, 2026)
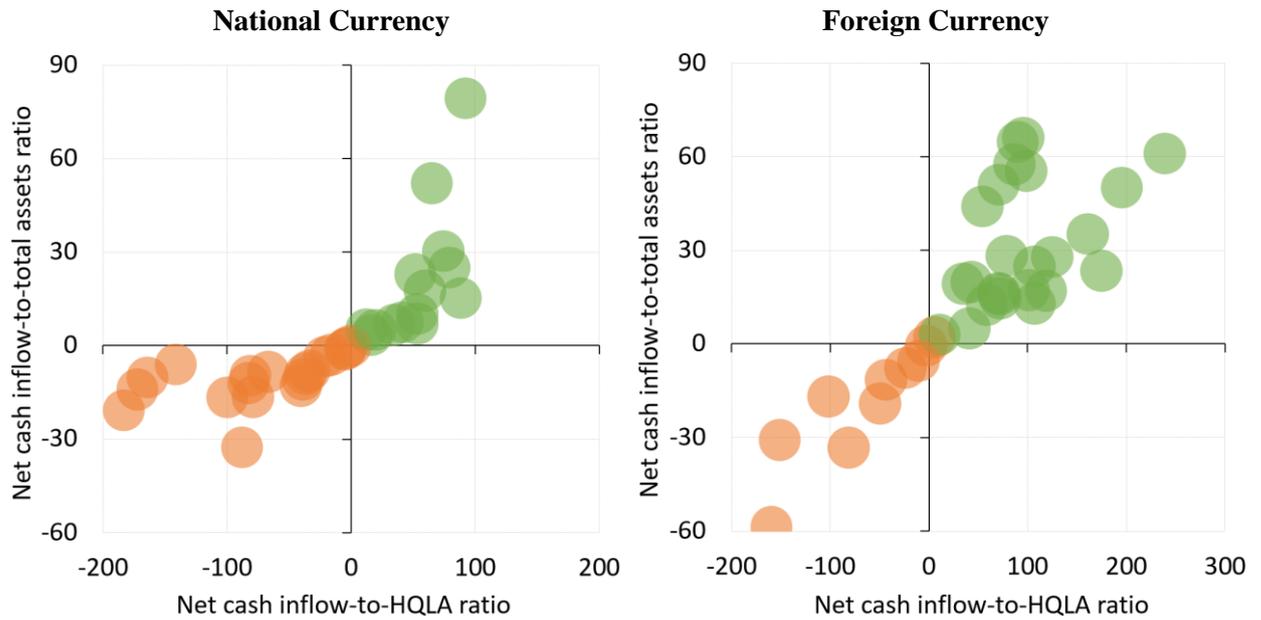
Source: CBU staff calculations.

Note: The graph presents data on banks, each depicted by a bubble, showing a ratio of net cash inflow in UZS and FX to total bank assets up to 90%, and a ratio of net cash inflow to HQLA up to 300%. Banks are color-coded: a green bubble denotes a bank with positive net cash inflows in FX, whereas a light red bubble represents a bank with negative net cash inflows in FX.

The largest depositors' withdrawals pose a liquidity risk for banks. As of July 1, 2026, stress-test results under the adverse scenario, incorporating the withdrawal of the largest depositor's funds, indicate that concentration risk could lead to a negative net cash inflow in UZS equivalent to 5% of total assets in UZS and 31% of HQLA. In contrast, under the scenario involving the withdrawal of the largest depositor in FX, the banking system is expected to maintain a positive net cash inflow.

VI. Macroprudential Policy

6.1. Macroprudential Policy Tools

MPP has been tightened through the use of borrower-based tools. From July 1, 2024, the debt burden requirement introduced for all types of loans to individuals has been further tightened starting in 2025. In particular, the limit on the DSTI ratio for loans to individuals was reduced to 50%[111] from January 1, 2025. As a result, the MPP index[112] increased in H1 2025.

Figure 162. MPP Index
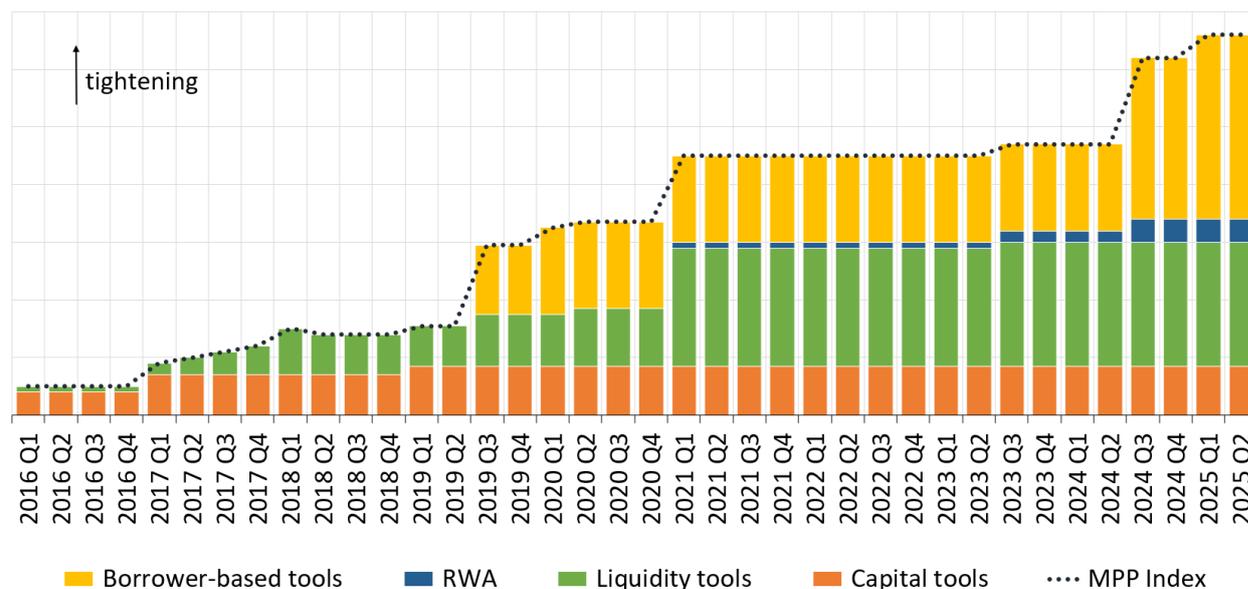
Source: CBU staff calculations.

Note: An increase of the MPP Index indicates a tightening of MPP.

Direct MPP tools were introduced to reduce credit losses. From July 24, 2025, direct restrictions were established on the LTV ratio in the issuance of mortgage and car loans to individuals[113]. In particular, an LTV cap of 75% was applied to car loans. In addition, the LTV cap for refinanced mortgages funded by the Ministry of Economy and Finance was set at 85%, while the limit for other mortgages was set at 80% (Appendix 5).

The importance of introducing MPP capital tools is increasing. Liquidity and borrower-based MPP tools aimed at ensuring the stability of the country's banking system are being continuously enhanced and actively applied. At the same time, there is a growing need for MPP capital tools to mitigate the adverse effects of potential cyclical systemic risks and strengthen banks' solvency (Appendix 6).

---

[111] O'zbekiston Respublikasi Markaziy banki boshqaruvining 2024 yil 26 yanvardagi "Qarz oluvchi jismoniy shaxslarning qarz yukini tartibga solish to'g'risidagi nizomga o'zgartirish va qo'shimchalar kiritish to'g'risida"gi 42/16–sonli qarori.

[112] MPP Index methodology is presented in the Financial Stability Report for 2024.

[113] O'zbekiston Respublikasi Markaziy banki boshqaruvining 2025 yil 8 apreldagi "Banklarga o'rnatiladigan makroprudensial normativlar hamda ular tomonidan beriladigan kreditlar (mikroqarzlar) bo'yicha to'lovlarning eng yuqori qiymatlariga doir talablar to'g'risidagi nizomni tasdiqlash haqida"gi 7/3–sonli qarori.

The CBU has developed a framework for setting the CCyB rate for banks. This basis represents the general framework for determining and adjusting the CCyB for Uzbekistan in accordance with Basel III standards. Quantitative approaches for determining the CCyB and the positive neutral countercyclical capital buffer (pnCCyB) rates are defined[114].

The implementation of the CCyB provides an opportunity to enhance the effectiveness of MPP tools. The CCyB is applied to ensure the continuity of credit to the real economy during periods of financial vulnerability and to strengthen the overall resilience of the banking system to cyclical systemic risks that build up during phases of excessive credit growth. The CCyB is held in the form of CET1 capital and ranges from 0% to 2.5% of RWA (Appendix 7).

Figure 163. Uzbekistan's Financial Cycle Index[115]
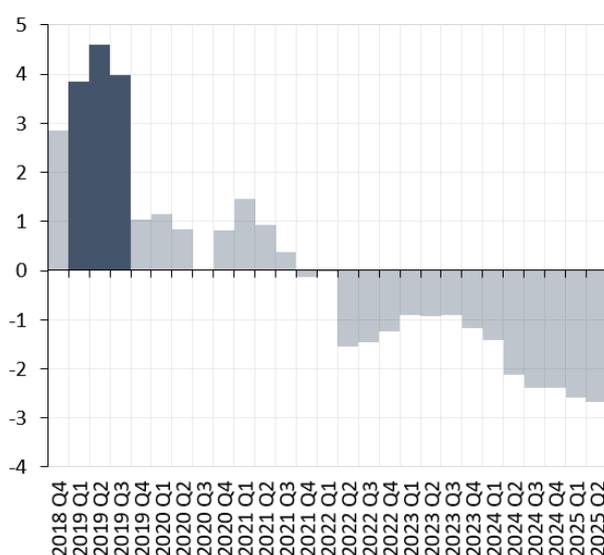
Figure 164. Credit to the Private Sector-to-GDP Gap, p.p.
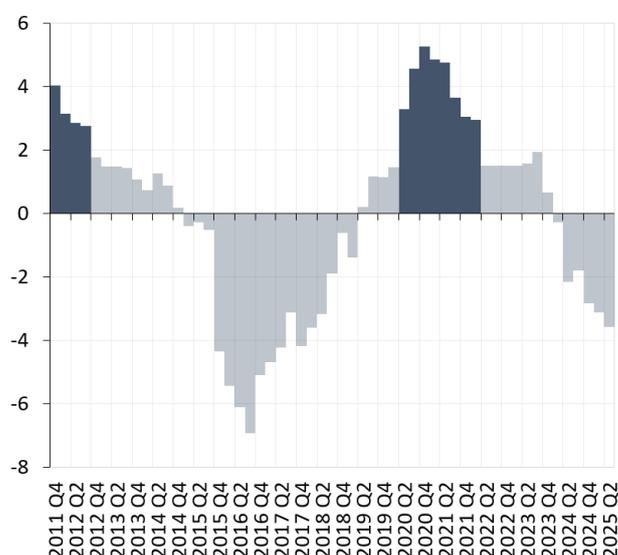
■ Buffer build-up period

Source: National Statistics Committee and CBU staff calculations.

Note: An increase in the financial cycle index indicates a period of economic expansion, while a decrease indicates a period of economic contraction.

For periods of establishing a pnCCyB based on credit to the private sector-to-GDP gap, the periods in which this gap is above 2% are taken into account[116]. According to Uzbekistan's financial cycle index, periods with the highest values are considered for the periods of establishing a pnCCyB.

---

[114] The Central Bank of the Republic of Uzbekistan. (2025). Countercyclical Capital Buffer Framework.

[115] The financial cycle index methodology is presented in the Financial Stability Report for 2023.

[116] The benchmark level of the buffer is calculated by the following formula based on credit to the private sector-to-GDP gap:

$$BBR = \begin{cases} 0 \; if, GAP < 2 \; p.p. \\ 0,3125 * GAP - 0,625 \; if, 2 \; p.p. \leq GAP \leq 10 \; p.p \\ 2,5\% \; if, GAP > 10 \; p.p. \end{cases}$$

Where,

BBR – benchmark buffer rate;
GAP – credit-to-GDP gap.

The financial cycle index and the credit-to-GDP gap indicate that the timing for setting a pnCCyB has been delayed. The financial cycle index, which has shown no sharp fluctuations in recent years, suggests that a standard risk environment prevails in the country. Additionally, credit to the private sector-to-GDP gap remains negative. As of July 1, 2025, credit to the private sector-to-GDP ratio was 4 p.p. below its long-term trend.

Effective indicators are used to set the CCyB rate. The credit-to-the-private-sector-to-GDP gap in isolation cannot provide a complete picture of the country's economic situation. Therefore, it is important to consider additional indicators when assessing the appropriate rate of the CCyB.

The selection of indicators is based on the results of the AUROC model. Drawing on the recommendations of international financial institutions and the experiences of foreign countries, a comprehensive set of indicators has been compiled. According to the results of the area under the receiver operating characteristic curve (AUROC) [117] for indicators with sufficiently long time series in this set, effective indicators representing the macroeconomic, financial, and non-financial sectors, as well as the real estate market, have been identified[118].

---

[117] AUROC methodology is presented in the research publications of the CBU.

[118] The Central Bank of the Republic of Uzbekistan. (2025). Countercyclical Capital Buffer Framework.

Table 1. Effective Indicators for CCyB Calibration

Indicators		2021 Q1	Q2	Q3	Q4	2022 Q1	Q2	Q3	Q4	2023 Q1	Q2	Q3	Q4	2024 Q1	Q2	Q3	Q4	2025 Q1	Q2
Macroeconomic Indicators	Private Sector Credit-to-GDP Gap																		
	Spread between Local Currency Lending Rates and Government Securities Yields																		
	FCI																		
	Total Credit-to-GDP Gap																		
	Nominal GDP Gap																		
	Inflation																		
	FSI																		
	Uzbekistan Sovereign Eurobond G-Spread																		
	Growth Rate of the Credit-to-GDP Ratio																		
	CAB-to-GDP Ratio																		
	Financial Cycle Index																		
Financial Sector	Loan-to-Deposit Ratio																		
	ROE																		
	NPL Growth Rate																		
	Banking Sector Assets-to-GDP Ratio																		
	NSFR																		
	Credit Growth Rate																		
	FX Lending Share																		
	ROA																		
	Leverage Ratio																		
	Tier 1 Capital Ratio																		
Non-financial Sector	Household Credit Growth Rate																		
	Corporate Credit-to-GDP Gap																		
	Household Credit-to-GDP Gap																		
	Corporate Credit Share																		
	Corporate Credit Growth Rate																		
Real Estate Market	House Price-to-Disposable Income Ratio																		
	Mortgage Credit Growth Rate																		
	House Price Growth Rate																		
	House Price Misalignment (Market Price vs. Fundamental Value)																		

Low ⟵———⟶ High
Financial vulnerability

The results of the analysis indicate that Uzbekistan is in the standard-risk phase of the financial cycle. During this phase, key indicators are generally aligned with their historical averages, while systemic risks remain at a moderate level. The standard-risk phase of the financial cycle suggests that a pnCCyB should be set. In this phase, strong growth in lending, continued growth in bank assets, a slowdown in the growth of NPLs, and a FSI fluctuating around its historical average all point to the economy being in the standard-risk phase of the financial cycle. As of July 1, 2025, the annual growth rate of NPL in banks' credit portfolios stood at 9.3%, which is 30 p.p. lower than in the same period of 2024[119].

Figure 165. Financial Cycle Phases
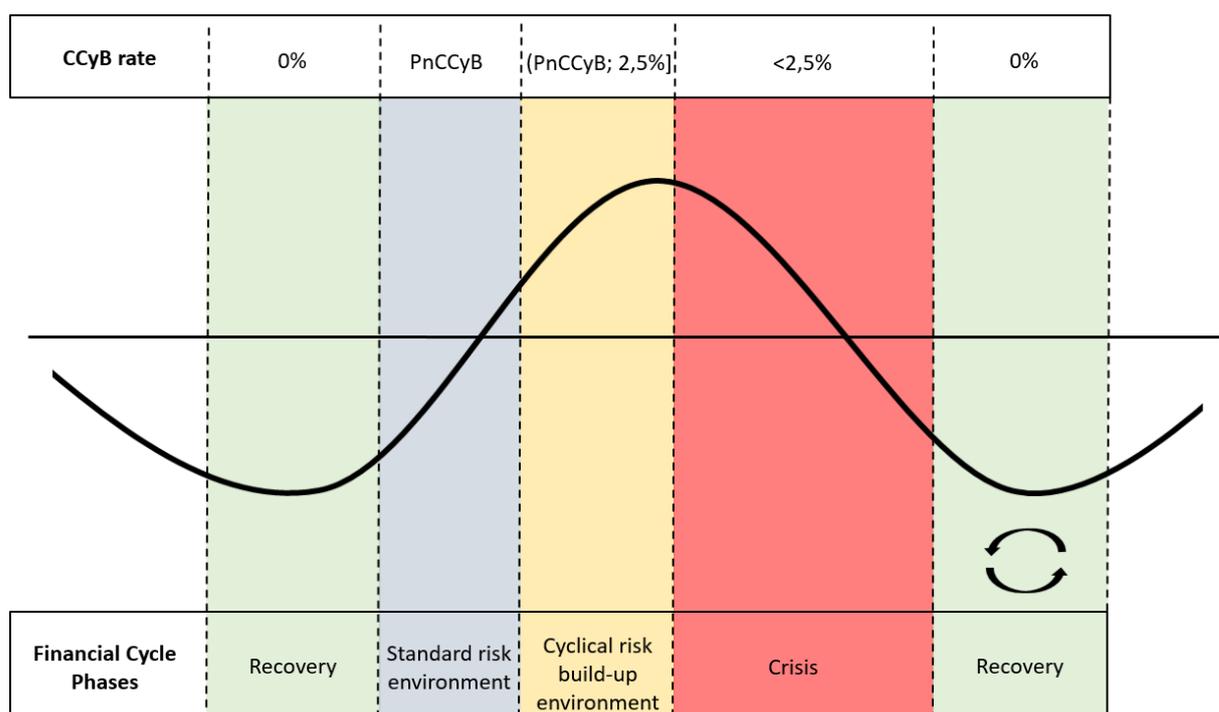
Source: CBU.

The CCyB and pnCCyB rates are calibrated based on quantitative approaches. In setting the CCyB rate, quantitative methods such as the benchmark buffer rate, solvency macro stress testing, historical loss analysis, the multivariate logit model, and the composite indicators index are applied. In addition, in setting the pnCCyB level, quantitative approaches like From losses-to-buffer approach, Solvency macro stress test, Multivariate logit model, and the Composite index are used. Furthermore, the CBU may also apply additional quantitative approaches when determining buffer rate[120].

The Benchmark level of CCyB is calibrated by the credit-to-GDP gap. The credit to the private sector-to-GDP gap is calculated as the difference of this ratio from its long-term trend,

---

[119] The Central Bank of the Republic of Uzbekistan. (2025). Statistical Bulletin for June 2025.

[120] The Central Bank of the Republic of Uzbekistan. (2025). Countercyclical Capital Buffer Framework.

estimated using a Hodrick–Prescott (HP) filter with a smoothing parameter of 400,000[121]. When the credit-to-GDP gap for the private sector is 2 p.p. or less, the benchmark buffer is set at 0% of RWA, when the gap reaches 10 p.p. or more, the benchmark buffer is set at 2.5% of RWA. For gaps between 2 p.p. and 10 p.p., the benchmark CCyB is determined linearly from 0% to 2.5% of RWA.

Solvency macro stress test results are used to set CCyB and pnCCyB rates. Under the Macro stress-testing approach, the CCyB rate is calibrated based on the gap between the CET1 capital ratio under the adverse scenario and its level at the starting point of the stress test, with this difference indicating the overall MPP capital buffer required to ensure the stable functioning of the banking sector. Within this approach, the pnCCyB rate is calibrated on the basis of the moderate scenario. When setting the CCyB and pnCCyB rates, the capital conservation buffer (CCoB) and the capital buffer for D-SIBs[122] are deducted from the total MPP capital buffer estimated under the adverse and moderate scenarios.

Under the Historical losses approach, the CCyB rate is calibrated based on the capital required to absorb past losses. After taking into consideration the additional capital accumulated in previous periods, the decline in the banking system's capital adequacy – driven by various factors – serves as a measure of realized losses. This approach considers the gap between the highest and lowest values of the CET1 capital ratio observed during periods of pronounced historical stress, with their arithmetic mean representing the total level of MPP capital buffers required to safeguard the stability of the banking system. When setting the CCyB rate, the CCoB and the capital buffer for D-SIBs are deducted from the total MPP capital buffer, taking into account the overall burden on the banking system.

Multivariate logit model is used to calibrate the CCyB and pnCCyB rates. The selected indicators are divided into smaller groups, on the basis of which multiple model combinations are constructed, and the probability of a crisis is estimated using a multivariate logit model. For the calibration of the CCyB rate, the end-of-period estimated crisis probabilities across the different model combinations are used, while the pnCCyB rate is based on the median of these probabilities. The CCyB and pnCCyB rates are derived as weighted arithmetic mean, with weights reflecting the number of buffer rates and model combinations associated with the model outcomes. Higher estimated probabilities of a crisis event correspond to higher buffer rates.

The CCyB and pnCCyB rates are calibrated based on the results of a composite indicator index. The selected indicators are first standardized using the Z-score method and then aggregated into a single composite index through principal component analysis (PCA)[123]. The 35th and 90th percentiles[124] of the index are used to derive the buffer rates, serving as the lower and upper optimal thresholds, as identified using a combination element of combinatorics, ordered logistic regression, and AUROC analysis. If the value of the index in the most recent observation period is below the 35th percentile, the CCyB rate is set at 0%, while values above

---

[121] Basel Committee on Banking Supervision. (2010, December). Guidance for national authorities operating the countercyclical capital buffer.

[122] For D-SIBs, as the capital buffer applies only to a subset of banks, its effective burden on the banking system is calculated by multiplying the buffer rate applicable to D-SIBs by their share of total RWA in the banking system.

[123] PCA methodology is presented in the research publications of CBU.

[124] The Central Bank of the Republic of Uzbekistan. (2025). Countercyclical Capital Buffer Framework.

the 90th percentile correspond to a CCyB rate of 2.5%. For index values between the 35th and 90th percentiles, the CCyB rate increases linearly from 0% to 2.5%. The pnCCyB rate is determined based on the historical 60th percentile of the composite index.

From losses-to-buffer approach is used to set the pnCCyB rate. This approach uses a quantile regression model to evaluate the effects of banking performance, macrofinancial indicators, and bank and time fixed effecta on banks' ROA. In calibrating the pnCCyB rate, the results of the quantile regression based on the 25th percentile of the ROA distribution are taken into account. The pnCCyB rate is calculated by dividing the estimated negative effect of the model-specific time fixed effects on ROA by the simple arithmetic mean of RWA density.

The results of the quantitative approaches used to assess the CCyB and pnCCyB are unified[125]. The outcomes of the individual quantitative approaches, as well as the resulting single rate, are rounded[126] in increments of 0.25 p.p.[127] Accordingly, the rounded values fall within a range of 0–2.5%. The single rate of CCyB and pnCCyB is determined by calculating the simple arithmetic mean of the rounded results across the quantitative approaches.

---

[125] The results of quantitative approaches are unified to a single rate by the following formula:

$$\bar{R} = \frac{\sum_{i=1}^{n} R_i}{n}$$

$$R \in \{CCyB; pnCCyB\}$$

Where,

$\bar{R}$ – A single rate of quantitative approach results in $CCyB$ or $pnCCyB$;
R_i – The rate of $CCyB$ or $pnCCyB$ determined by an i - order quantitative approach;
n – number of quantitative approaches.

[126] The unrounded value is rounded up to the nearest multiple of 0.25%.

[127] The results of quantitative approaches and the single rate of quantitative approaches are rounded by the following formula:

$$\tilde{r} = \min\left(\max\left(\frac{\lceil \hat{r} * 4 \rceil}{4}; 0\right); 2{,}5\right)$$

$$r \in \{R_i; \bar{R}\}$$

Where,

$\lceil \hat{r} \rceil$ –the nearest integer not less than $\hat{r}$;
$\tilde{r}$ – the rounded value of either the single rate of the quantitative approach or their results;
$\hat{r}$ – the unrounded value of either the single rate of the quantitative approach or their results;
R_i – quantitative approach results;
$\bar{R}$ – a single rate of quantitative approach results;
min – the smallest value among the indicators;
max – the largest value among the indicators.

Table 2. Quantitative Approach Results to Set the CCyB Rate, % (as of July 1, 2025)

Quantitative approaches	CCyB rate, %
Benchmark buffer rate	0
Solvency macro stress test	2.5
Historical losses	1.75
Multivariate logit model	0.25
Composite index	0

Source: CBU staff calculations.

Note: Results of quantitative approaches are rounded to multiples of 0.25 p.p.

The single rate of CCyB calibrated from the quantitative approaches amounted to 1%. As of 1 July 2025, the macro stress test on solvency indicated a CCyB rate of 2.5%, while the historical loss approach suggested a rate of 1.75% and the multivariate logit model pointed to a rate of 0.25%. In addition, the results obtained from the benchmark buffer and composite indicator index approaches remained below the thresholds that would signal CCyB activation.

Table 3. Quantitative Approach Results to Set the pnCCyB rate, % (as of July 1, 2025)

Quantitative approaches	pnCCyB rate, %
From losses-to-buffer	0.5
Solvency macro stress test	0
Multivariate logit model	0.25
Composite index	0.75

Source: CBU staff calculations.

Note: Results of quantitative approaches are rounded to multiples of 0.25 p.p.

The single rate derived from the quantitative approaches indicates the need to set the pnCCyB at 0.5% under a standard risk environment. From losses-to-buffer approach suggests a pnCCyB rate of 0.5%, while the multivariate logit model and the composite index approaches indicate rates of 0.25% and 0.75%, respectively. The solvency macro stress test approach implies a pnCCyB rate of 0% of RWA. When setting the CCyB rate, the highest value among single rates is applied[128].

---

[128] The largest amount of buffer between the single rates of quantitative approaches implemented on CCyB and pnCCyB is determined by the following formula:

$$CCyB = max\ (CCyB;\ pnCCyB)$$

Where,

$CCyB$ – countercyclical capital buffer rate;
$pnCCyB$ – positive neutral countercyclical capital buffer rate;
max – the largest value between the indicators.

6.2. Risks and Mitigation Measures

Key financial stability risks of Uzbekistan and mitigation measures	Risk level and its change	
	In the short term	In the medium term
Uncertainties in international financial markets and persistently high external financing costs. Despite the decrease in interest rates in international financial markets, the interest rate environment remains relatively high. This makes it difficult for the country to attract financial funds from external sources and increases the cost of servicing foreign debt. Consequently, banks' capacity to provide loans to the economy using foreign funds declines, exerting upward pressure on domestic credit interest rates. Short-term asset-backed crypto-assets (stablecoins) are gaining popularity among investors in global financial markets. At the same time, the concentration of issuers of these crypto-assets remains high. A large-scale, rapid sale of these securities triggered by the probability of sharp fluctuations in crypto-asset values could substantially increase supply and negatively affect the international capital market. **Risk mitigation measures:** - enhancing opportunities to attract foreign direct investment through improvements in the investment environment; - ensuring strict compliance with the established upper limit for the consolidated budget deficit; - implementing export promotion measures to reduce the pressure of declining external financing on the depreciation of the UZS; - expanding domestic financing amid high volatility in international financial markets.	→	↗
Increased credit risk in microdebts. An increase in NPL on microdebts within banks' credit portfolios raises credit risk and, consequently, potential credit losses. Moreover, since collateral is not required for microdebts, banks may face losses if borrowers fail to meet their repayment obligations. **Risk mitigation measures:** - ensuring that exceptional loan allocations do not bypass debt burden assessments for microdebts, in line with established debt burden requirements; - introducing loan-to-income (LTI) limit for microdebts; - establishing a minimum monthly income threshold for microdebt eligibility, calibrated according to minimum consumer expenses.	↗	→

Key financial stability risks of Uzbekistan and mitigation measures	Risk level and its change	
	In the short term	In the medium term
Concentration of deposit in banks. Concentration risk related to large depositors persists in banks' deposit portfolios. In some banks, the share of funds held by the largest depositor remains high in both UZS and FX deposits. **Risk mitigation measures:** - establishing a limit on the maximum amount of deposit funds from a single depositor or a group of related depositors relative to Tier 1 capital or bank assets; - tightening of coefficients used in calculating LCR and NSFR for funds of large depositors.	→	↗
The rise of cyber risks. As payment systems and digitization accelerate, the occurrence of cyber risks is also increasing. Elevated cyber risk may undermine confidence in the financial system and adversely affect financial stability. Moreover, the growing number of cyberattacks, information security breaches, and data theft heightens operational risk and may lead to increased financial losses for financial system participants due to external events. **Risk mitigation measures:** - introducing artificial intelligence–based monitoring systems to detect suspicious transactions and apply restrictions to transactions identified as high risk; - developing and improving information security systems among financial system participants in the conditions of the evolving information technologies; - enhancing the level of financial literacy of the population with regard to cyberattacks and fraud.	↗	↗
Uncertainty regarding residential property price corrections. Residential property prices have declined and are approaching their fundamental value. The continued downward trend in prices could weaken the collateral coverage of mortgages. When loan amounts significantly exceed collateral values, borrowers may opt to relinquish the collateral rather than continue repayment, increasing the risk of credit losses. **Risk mitigation measures:** - introducing a sectoral CCyB for mortgages; - enhancing the credit scoring system and setting relatively high minimum credit score requirements for borrowers when granting mortgages.	→	↗

Key financial stability risks of Uzbekistan and mitigation measures	Risk level and its change	
	In the short term	In the medium term
Rising of climate change risks. Risks stemming from climate change can lead to significant losses for businesses and individuals, ultimately impacting the financial system. In particular, the vulnerability of key sectors of the national economy to physical and transition risks associated with climate change may increase. **Risk mitigation measures:** - continuously assessing the impact of physical and transition risks of climate change on the financial health of banks through climate stress testing; - implementing stricter capital requirements for sectors vulnerable to climate change risks while applying lower capital requirements for green investment projects; - tightening liquidity requirements for banks with a high concentration of exposure to sectors vulnerable to climate change risks; - increasing expenditures that have a positive impact on climate change within the state budget.	→	↗

Low risk	Medium risk	High risk

Note: The direction of the arrow indicates the change in the risk level.

Climate Change Dashboard

Table 4. Climate Change Dashboard for Uzbekistan

	Indicator	Unit	The value of before the reference period	The value of the reference period	Reference period	Change
Climate indicators	Total greenhouse gas emissions	million metric tons of carbon dioxide (CO$_2$)* equivalent	211.4	227.5	2024	↑
	Total greenhouse gas emissions per capita	metric tons of carbon dioxide (CO$_2$) equivalent	5.7	6.1	2024	↑
	Total greenhouse gas emissions per unit of GDP	metric kilogram of carbon dioxide (CO$_2$) equivalent per 1 million UZS	175.5	156.4	2024	↓
	Total greenhouse gas emissions from agriculture	million metric tons of carbon dioxide (CO$_2$) equivalent	51.9	52.2	2024	↑
	Total greenhouse gas emissions from industrial processes and product use	million metric tons of carbon dioxide (CO$_2$) equivalent	10.3	10.3	2023	→
	Total greenhouse gas emissions from energy sectors	million metric tons of carbon dioxide (CO$_2$) equivalent	147.3	145.3	2023	↓
	Total greenhouse gas emissions from waste	million metric tons of carbon dioxide (CO$_2$) equivalent	6.9	7.1	2024	↑
	Effects of land-use and forestry on greenhouse gas emissions	million metric tons of carbon dioxide (CO$_2$) equivalent	-3.4	-3.4	2023	→
	Other greenhouse gas emissions	million metric tons of carbon dioxide (CO$_2$) equivalent	0.3	0.3	2023	→
	Total greenhouse gas emissions in countries that share climate-related risks with Uzbekistan**	billion metric tons of carbon dioxide (CO$_2$) equivalent	44.4	44.9	2024	↑
	Total carbon dioxide emissions	million metric tons	132.6	148.5	2024	↑
	Total methane emissions	million metric tons of carbon dioxide (CO$_2$) equivalent	64.4	64.3	2024	↓
	Total methane emissions from agriculture	million metric tons of carbon dioxide (CO$_2$) equivalent	37.6	37.8	2024	↑
	Total methane emissions from industrial processes and product use	thousand metric tons of carbon dioxide (CO$_2$) equivalent	0.9	0.9	2023	→
	Total methane emissions from energy sectors	million metric tons of carbon dioxide (CO$_2$) equivalent	19.7	18.7	2023	↓
	Total methane emissions from waste	million metric tons of carbon dioxide (CO$_2$) equivalent	6.3	6.4	2024	↑
	Total energy efficiency***	percent	4.5	4.2	2024	↓

Indicator	Unit	The value of before the reference period	The value of the reference period	Reference period	Change
Climate altering land cover index (CALCI)****	index	99.04	98.98	2022	↓
Temperature change with respect to a baseline climatology, corresponding to the period 1951–1980	Celsius	2.4	2.1	2024	↓
Water scarcity indicator	index		3.1	2024	
The share of renewable energy sources in the total volume of electricity production	percent	9.6	17.2	2024	↑
Share of industry in total electricity consumption	percent	30.2	31.1	2024	↑
Share of agriculture in total electricity consumption	percent	11.7	11.3	2024	↓
Environmental protection expenditure as percent of GDP	percent	0.38	0.42	2024 H1	↑
Share of state budget expenditures***** with a positive impact on climate change as a percent of GDP	percent	3.8	2.6	2024	↓
Exports of low carbon technology products as percent of GDP	percent	0.1	0.1	2023	→
Imports of low-carbon technology products as percent of GDP	percent	1.8	3.2	2023	↑
Total trade in low carbon technology products as percent of GDP	percent	1.9	3.3	2023	↑
Volume of electricity production by renewable energy sources	billion kWh	7.5	13.0	2024	↑
Increase in electricity prices	percent	67.0	18.8	2025 H1	↓
Amount of fossil fuel subsidies	billion USD	13.2	14.5	2022	↑

Real economic indicators (row group label spanning the lower portion of the table)

Climate-related financial indicators	Volume of "green" sovereign international bonds	million USD	348.4	873.4	2025 H1	↑
	Share of industry loans in total loans	percent	28.2	27.4	2025 H1	↓
	Share of agricultural loans in total loans	percent	10.5	10.1	2025 H1	↓
	Share of construction loans in total loans	percent	2.5	2.6	2025 H1	↑
	Share of transport and communication loans in total loans	percent	6.9	5.8	2025 H1	↓
	Share of loans allocated in Tashkent in total loans in Uzbekistan	percent		49.9	2025 H1	
	Share of loans to non-financial organizations in total banking system assets	percent	47.8	44.0	2025 H1	↓
	Share of mortgages to individuals in total banking system assets	percent	9.0	8.5	2025 H1	↓
	Insurance penetration	per mille	6.3	7.2	2025 H1	↑

Sources: IMF, European Commission, World Wildlife Fund, National Statistics Committee, Ministry of Economy and Finance, National Agency of Prospective Projects and CBU calculations.

Note: Positive changes in the indicator are represented by green symbols, negative changes by red symbols, and unchanged states by yellow symbols. In addition, the direction of these signs means changes in the value of indicators.

*Carbon dioxide (CO_2) equivalent is a metric measure used to compare the emissions from greenhouse gases on the basis of their global-warming potential (GWP), by converting the amounts of other gases to the equivalent amount of carbon dioxide with the same global-warming potential. Carbon dioxide equivalents are usually expressed as million metric tons of CO_2 equivalent. The CO_2 equivalent for a gas is derived by multiplying the tons of the gas by the associated global warming potential.

**Afghanistan, China, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Turkey and Turkmenistan, are taken into account as countries that share climate change risks with Uzbekistan[129].

***Total energy efficiency determines the amount of GDP per unit of consumption of total fuel and energy resources.

****The Climate Altering Land Cover Index (CALCI) is used to assess changes in land cover that may have a significant impact on climate change. It takes into account changes in land cover, such as deforestation, level of urbanization and expansion of agricultural land. The year 2015 was selected as the base for the index since all countries reported land cover data for that year (2015 = 100).

*****State budget expenditures that have a positive impact on climate, by their nature, include costs aimed at preventing factors that negatively affect the climate and expenses for adapting to climate change. These represent expenditures directed at financing measures that reduce greenhouse gas emissions, as well as timely adaptation costs aimed at preventing or mitigating losses associated with the inevitable consequences of climate change.

[129] Kollenda, P., Logan, S., & Wang, D. (2025). Finding your Peers: Comparing Countries on a Level Playing Field. World Bank Paper.

When selecting countries that affect the country in terms of climate risks, it is appropriate to consider the location of the countries, mutual trade turnover, and income level, in particular GDP per capita.

The climate change dashboard for Uzbekistan indicates rising transition risks associated with climate change[130]. In particular, in 2024, total greenhouse gas emissions in Uzbekistan increased by 7.6% compared to 2023. Over the same period, total greenhouse gas emissions in countries that share climate-related risks with Uzbekistan rose by 1.3%.

The energy sector accounts for the largest share of total greenhouse gas emissions. Overall energy efficiency in the country has deteriorated. In 2024, electricity generation from renewable energy sources increased by 73.7% annually, raising their share to 17.2%[131] of total electricity generation. This development indicates a partial mitigation of transition risk–related vulnerabilities in the energy sector, which is among the sectors most exposed to climate change risks.

The magnitude of physical risks[132] associated with climate change has also declined. In particular, the reduction in the CALCI reflects a decrease in land cover changes that could have significant impacts on the climate. In addition, the growth in air temperature in Uzbekistan relative to the long-term baseline moderated to 2.1°C.

In 2024, the share of state budget expenditures with a positive impact on climate change in GDP declined by 1.2 p.p. compared to 2023. Subsequently, following the placement of the Republic of Uzbekistan's next sovereign international bonds[133] in global financial markets in H1 2025, the volume of sovereign international bonds issued with "Green"[134] status increased 2.5 times.

The magnitude of potential credit losses associated with climate change risks has also declined. In particular, by the end of H1 2025, the share of loans extended to sectors more vulnerable to physical and transition climate risks – such as industry, agriculture, transport, and communication – within the banking system's credit portfolio decreased. This trend indicates a relative reduction in the credit risk faced by these sectors due to potential financial losses arising from the transition to a low-carbon economy[135].

---

[130] Transition risks are associated with the transition to a low-carbon economy, and changes in technology, legislation and country policies aimed at climate change mitigation and adaptation can affect the value of financial assets and liabilities.

[131] National Statistics Committee. (2025). Share of green energy in energy production (annual).

[132] Physical risks, i.e. the economic costs associated with the intensification and frequent recurrence of extreme weather events related to climate change, may reduce the value of financial assets or increase liabilities.

[133] Ministry of Economy and Finance. (2025). News: Uzbekistan issues next sovereign international bonds.

[134] Sovereign international bonds with a "Green" designation were issued under Uzbekistan's bond program designed to finance the Sustainable Development Goals. Proceeds from the "Green" bonds are directed towards financing projects such as the implementation of water-saving technologies, organization of sanitation improvements, and other similar initiatives.

[135] O'zbekiston Respublikasi Prezidentining 2022 yil 2 dekabrdagi "2030 yilgacha O'zbekiston Respublikasining "yashil" iqtisodiyotga o'tishiga qaratilgan islohotlar samaradorligini oshirish bo'yicha chora-tadbirlar to'g'risida"gi PQ-436–sonli qarori.

Appendices

Systemic Contingent Claims Analysis Model

The Systemic Contingent Claims Analysis[136] model is used to assess systemic risks by analyzing the relationship between the market value of bank assets and liabilities. In this model, using expected losses of assets in banks and interconnectedness between banks, expected shortfall for the banking system is determined.

The Systemic Contingent Claims Analysis model is implemented in two steps. In the first step, the Contingent Claims Analysis[137] is conducted using the factors representing bank distress. In this context, DtD, PD and expected loss are determined for each analyzed bank.

In the second step, the estimated expected losses for banks are combined into a multivariate distribution at the banking system level. The probabilistic measure of banks' joint expected losses is determined, and the Systemic Contingent Claims Analysis value for the banking system is derived.

A. Contingent Claims Analysis

Through Contingent Claims Analysis, the probability of a decline in the bank assets below distress barrier and the expected losses at that probability are estimated based on balance sheet and market data. Specifically, in implementing Contingent Claims Analysis, the distress barrier is identified based on the market value of bank equity, equity volatility, the risk-free rate, and outstanding liabilities. These indicators are then used to calculate the DtD, PD, and expected losses.

The market value of bank equity is determined as the sum of the products of the market prices and the number of outstanding ordinary and preference shares on the capital market. The volatility of bank's equity market value is measured as the annualized SD[138] of daily volatility over a 125-day rolling window. The rate on treasury bonds is used as the risk-free rate.

---

[136] Jobst, A., & Gray, D. (2013). Systemic Contingent Claims Analysis – Estimating Market-Implied Systemic Risk. IMF Working Paper.

[137] Kyriakopoulos, C., Koulis, A., & Varvounis, G. (2023). Importance of the Contingent Claims Analysis in Detecting Banking Risks: Evidence from the Greek Bank Crisis. Journal of Central Banking Theory and Practice.

[138] Taking into account the average of 250 trading days per year, the volatility of the bank equity market value is annualized by multiplying the SD of the daily volatility calculated over the 125-day rolling window by $\sqrt{250}$.

In the Contingent Claims Analysis model, the distress barrier is defined. A decline in bank assets below this barrier implies an increase in the PD. In this context, the distress barrier is specified as the sum of short-term debts and one-half of long-term debts:

$$B = D_S + 0{,}5 * D_L$$

Where,
B – distress barrier;
D_S – short-term debts;
D_L – long-term debts.

The value of bank's risky debt is determined by the difference between the current value of default-free debt and the expected losses:

$$D_t = B_t e^{-(T-t)} - P_t$$

Where,
D_t – value of risky debt at time t;
B_t – distress barrier;
T – maturity;
P_t – value of expected losses at time t.

Figure 166. Contingent Claims Analysis Recursions

Input Data	E, σ_E, B, r, T

Assessment of the Market Value and Volatility of Assets	A, σ_A

Determination of DtD

$$d_1 = \frac{ln\left(\frac{A}{B}\right) + \left(r + \frac{\sigma_A^2}{2}\right)T}{\sigma_A\sqrt{T}}$$

$$d_2 = d_1 - \sigma_A\sqrt{T}$$

Estimation of PD

$$PD = N(-d_2) = 1 - N(d_2)$$

Estimation of Expected Losses

$$P = B_T e^{-rT}\big(1 - N(d_2)\big) - A\big(1 - N(d_1)\big)$$
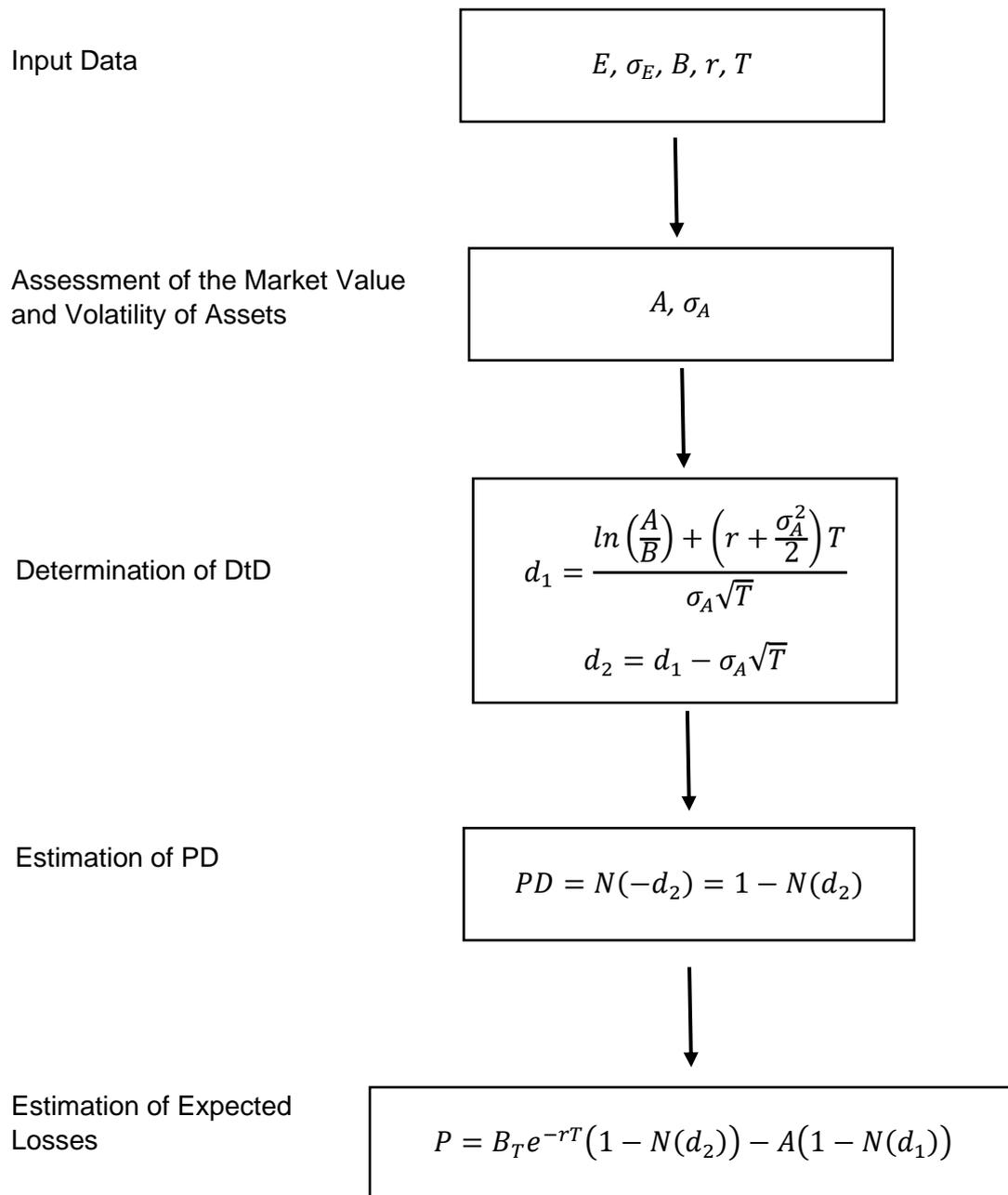
Source: CBU.

The assets usually follow a stochastic process[139] and their differential equation can be represented as follows:

$$\frac{dA}{A} = \mu_A dt + \sigma_A dZ(t)$$

Where,

$\frac{dA}{A}$ – relative change in asset value;

μ_A – instantaneous drift;

σ_A – volatility of assets;

$Z(t)$ – Wiener-process[140].

The differential equation of a continuous random variable[141] presented above is referred as a geometric Brownian motion[142].

By solving the geometric Brownian motion equation, the continuous random variable of assets at period t is expressed as follows:

$$A_t = A_0 e^{\left(\mu_A - \frac{\sigma_A^2}{2}\right)t + \sigma_A Z(t)}$$

Where,

A_t – market value of assets at time t;

A_0 – initial value of assets;

μ_A – instantaneous drift;

σ_A – volatility of assets;

$Z(t)$ – Wiener-process.

---

[139] Stochastic process is a process that evolves over time under the influence of randomness.

[140] Szabados, T. (1994). An Elementary Introduction to the Wiener Process and Stochastic Integrals. Technical University of Budapest.

Wiener-process represents the stochastic component of asset prices and is used to model unpredictable random fluctuations in asset prices.

[141] The continuous random variable is a random variable that can take all values within a finite or infinite interval, and its probability density function is expressed in the following form:

$$P(a \leq X \leq b) = \int_a^b f(x)dx$$

Where,
a – lower bound of the probability density function;
b – upper bound of the probability density function.

[142] Shreve, S. (2004). Stochastic Calculus for Finance II: Continuous-Time Models. Springer Finance.

Geometric Brownian motion is a model that describes the evolution of financial asset prices over time.

The value of the bank's assets at time t falling below the distress barrier indicates vulnerabilities. The theoretically derived probability of this event is expressed as follows:

$$P(A_t \leq B_t) = N\left(-\frac{\ln\left(\frac{A_0}{B_t}\right) + \left(\mu_A - \frac{\sigma_A^2}{2}\right)(T - t)}{\sigma_A\sqrt{T - t}} = -d_{2,\mu}\right).$$

Where,
$P(A_t \leq B_t)$ – probability of distress;
$N\left(-d_{2,\mu}\right)$ – standard cumulative normal distribution function;
$d_{2,\mu}$ – DtD.

Using the sum of capital and debt equal to the value of assets, the value of risky debt is determined as follows:

$$D_t = A_t - E_t.$$

Where,
D_t – market value of risky debt;
E_t – market value of equity;
A_t – market value of assets.

In order to determine the market value of debt, the market value of the assets and their volatility are used:

$$E = AN(d_1) - Be^{-rT}N(d_2).$$
$$D = A - AN(d_1) + Be^{-rT}N(d_2)$$
$$d_1 = \frac{\ln\left(\frac{A}{B}\right) + \left(r + \frac{\sigma_A^2}{2}\right)T}{\sigma_A\sqrt{T}}$$
$$d_2 = d_1 - \sigma_A\sqrt{T}.$$

The market value and volatility of assets are determined by the market value and volatility of equity applying Ito's lemma[143]. Ito's lemma helps to calculate the variation of a function in continuously evolving and unpredictable processes. In this context, the following equation is obtained by adding a second-order term to the ordinary differential:

[143] Washburn, B., & Dik, M. (2021). Derivation of Black-Scholes equation using Ito's lemma. Proceedings of International Mathematical Sciences.

$$dE = \left(\frac{\partial E}{\partial A} \mu_A + \frac{\partial E}{\partial t} + \frac{1}{2} \frac{\partial^2 E}{\partial A^2} \sigma_A^2 \right) dt + \frac{\partial E}{\partial A} \sigma_A dZ$$

$$E\sigma_E = A\sigma_A \frac{\partial E}{\partial A} = A\sigma_A N(d_1).$$

$$E = AN(d_1) - Be^{-rT}N(d_2)$$

$$E\sigma_E = A\sigma_A N(d_1)$$

Through this, the market value and volatility of assets can be determined. In this case, the unknown parameters are estimated using the Broyden method[144].

Based on the estimated market value and volatility of assets, DtD, PD, and expected losses are determined. In particular, DtD and PD are calculated as follows:

$$DtD = \frac{\ln\left(\frac{A}{B}\right) + \left(r - \frac{\sigma_A^2}{2}\right)T}{\sigma_A\sqrt{T}} = d_2$$

$$PD = N(-d_2) = 1 - N(d_2)$$

The DtD represents the number of SD between the expected value of asset and the distress barrier. In cases where the estimated asset values fall below the distress barrier, a rise in the DtD reduces the PD, while a decrease in the number of SD raises the PD.

Based on DtD and PD, expected losses are determined:

$$P = B_T e^{-rT}\big(1 - N(d_2)\big) - A\big(1 - N(d_1)\big)$$

$$d_1 = d_2 + \sigma_A\sqrt{T}.$$

Where,
P – expected losses;
B – distress barrier;
r – risk-free rate;
T – maturity;
d_2 – DtD;
A – market value of assets;
σ_A – volatility of assets.

In the next step, the estimated expected losses at individual bank level are combined into the multivariate distribution at system-wide level.

---

[144] Dennis, J., & Schnabel, R. (1996). Numerical Methods for Unconstrained Optimization and Nonlinear Equations. Society for Industrial and Applied Mathematics Philadelphia.

Broyden method is a numerical iteration algorithm used to solve a system of complex nonlinear equations.

B. Systemic Contingent Claims Analysis

To assess default risk of the banking system, the expected losses of individual banks are aggregated. In determining the expected losses of the banking system, the marginal distribution of expected losses in banks, the dependence structure and the joint distribution are evaluated.

The marginal distribution of expected losses for each bank is estimated based on the expected losses determined using the Contingent Claims Analysis model, in accordance with Extreme Value Theory (EVT)[145].

[145] Kotz, S., & Nadarajah, S. (1999). Extreme Value Distributions: Theory and Applications. Imperial College Press.

Figure 167. Systemic Contingent Claims Analysis Recursions

Input Estimated Expected Losses

$$P_{E,j}^n(t), \ldots, P_{E,m}^n(t)$$

Estimation of Individual Marginal Distributions

$$\hat{\mu}_j, \hat{\sigma}_j, \hat{\xi}_j$$

Determination of Dependence Structure

$$\Upsilon(\omega) = min\left\{1, max\left\{n\left(\sum_{j=1}^{n} \Lambda_{j=1}^{m} \frac{y_{i,j}}{\omega_j \hat{y}_{\cdot j}}\right)^{-1}, \omega, 1-\omega\right\}\right\}$$

Determination of Joint Distribution

$$G_{t,m}(x) = exp\left\{-\left(\sum_{j=1}^{m} y_{t,j}\right)\Upsilon_t(\omega)\right\}$$

Estimation of Joint Value at Risk ($VaR(a)$)

$$VaR(a) = inf\{x: F(x) \geq a\}$$

Estimation of Expected Shortfall

$$ES(a) = \frac{1}{1-a}\int_a^1 VaR(b)\, db$$
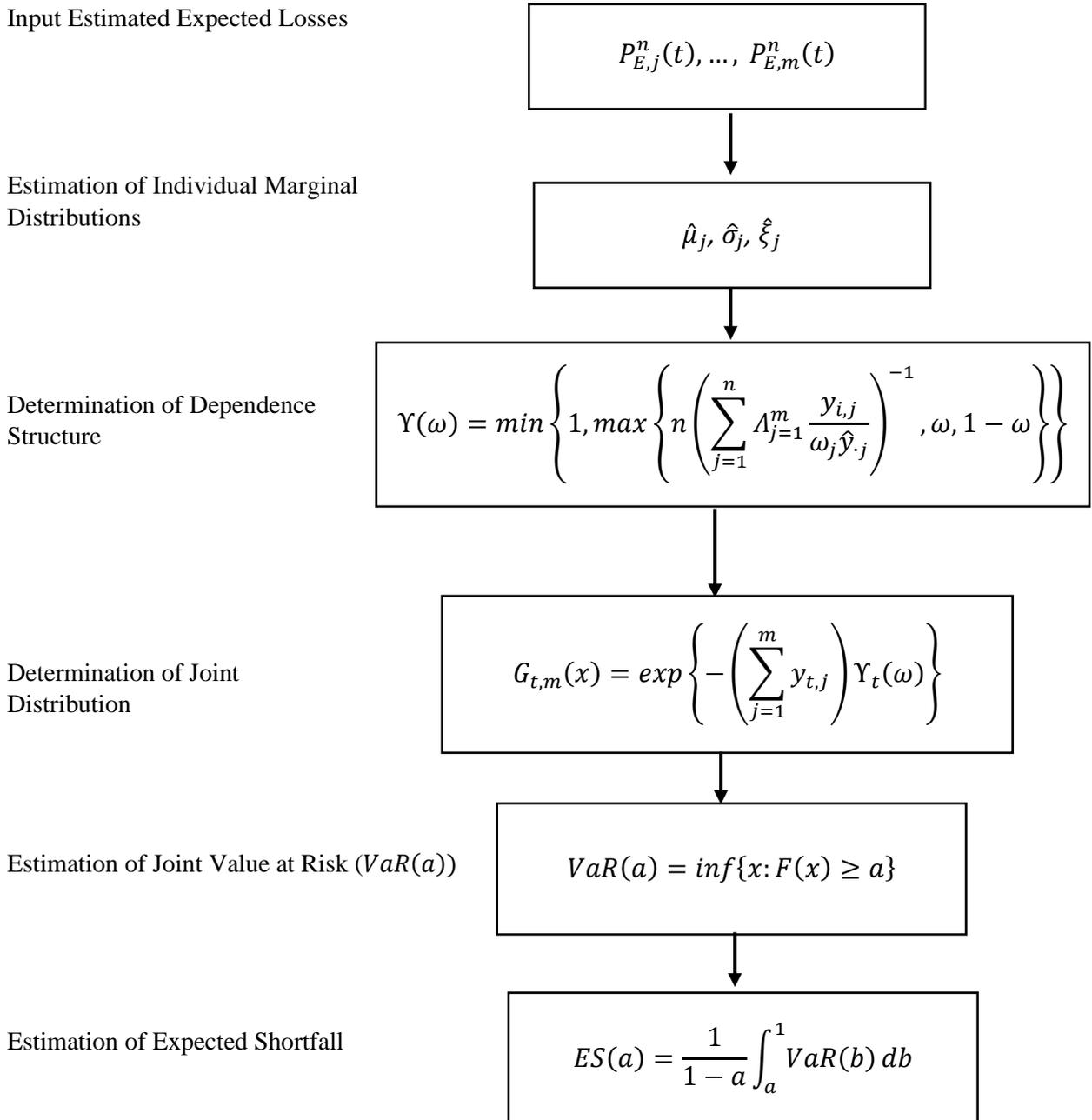
Source: CBU.

The vector-valued series of expected losses with independent and identically distributed random variables is represented as follows:

$$X_j^n = P_{E,1}^n(t), \ldots, P_{E,m}^n(t).$$

Where,

j – banks;

$P_{E,m}^n(t)$ – expected losses at time t.

The individual asymptotic tail behavior is modeled in accordance with the Fisher-Tippett-Gnedenko[146] theorem, which determines distribution of normalized maxima (or minima) to be of extremal type:

$$X = \max\left(P_{E,j}^n(t), \ldots, P_{E,m}^n(t)\right).$$

When the maximum obtained from n observations are expressed in normalized form using the normalizing constants $\beta_j^n > 0$ and α_j^n, these values converge to the distribution of Generalized Extreme Value (GEV) ($x \in R$):

$$F_n^{[\beta^n x + \alpha^n]}(x) = \lim_{n\to\infty} \Pr\left(\frac{X - \alpha^n}{\beta^n} \le y\right) = [F(\beta^n y + \alpha^n)]^n \to H(x).$$

The GEV distribution conforms to one of the three distinct types of extremal behavior: Gumbel (EV$_0$), Frechet (EV$_1$) and negative Weibull (EV$_2$) and is given by the following form:

$$\text{EV}_0: H_0(x) = \exp(-\exp(-x)), \qquad if\ x \ge 0,\ \xi = 0$$

$$\text{EV}_1: H_{1,\xi}(x) = \exp\left(-x^{-\frac{1}{\xi}}\right), \qquad if\ x \in \left[\mu - \frac{\sigma}{\xi}, \infty\right), \xi > 0$$

$$\text{EV}_2: H_{2,\xi}(x) = \exp\left(-(-x)^{-\frac{1}{\xi}}\right), \qquad if\ x \in \left(-\infty, \mu - \frac{\sigma}{\xi}\right], \xi < 0.$$

By combining the limit distributions, the following probability density function is obtained:

$$b_{\mu,\sigma,\xi}(x) = \frac{1}{\sigma}\left(1 + \xi\frac{(x-\mu)}{\sigma}\right)^{\left(-\frac{1}{\xi}\right)-1} \exp\left(-\left(1 + \xi\frac{(x-\mu)}{\sigma}\right)_+^{-\frac{1}{\xi}}\right)$$

[146] Peon, P. (2020). Statistical Extreme Value Theory. Application to basins of the Basque Country. Master Universitario en Matematicas y Computacion.

The cumulative distribution function obtained from the probability density function takes the following form:

$$H_{\mu,\sigma,\xi}(x) = \begin{cases} \exp\left(-\left(1 + \xi\frac{(x-\mu)}{\sigma}\right)^{-\frac{1}{\xi}}\right), if\ 1 + \xi\frac{(x-\mu)}{\sigma} \geq 0 \\ \exp\left(-\exp\left(-\frac{(x-\mu)}{\sigma}\right)\right), \qquad if\ x \in R, \xi = 0. \end{cases}$$

The univariate marginal density function of each expected loss series converging to GEV distribution is defined as:

$$y_i(x) = \left(1 + \hat{\xi}_j\frac{(x - \hat{\mu}_j)}{\hat{\sigma}_j}\right)_+^{-\frac{1}{\hat{\xi}_j}} (j = 1, ..., m).$$

$$1 + \xi_j\frac{x - \mu_j}{\sigma_j} > 0$$

$$\sigma_j > 0$$

$$\xi_j \neq 0$$

The mean, variance, skewness and kurtosis of univariate density function are determined:

$$\text{Mean:} \begin{cases} \mu + \dfrac{\sigma(\Gamma(1-\xi)-1)}{\xi}, if\ \xi \neq 0, \xi < 1 \\ \mu + \sigma\gamma, if\ \xi = 0 \\ \infty, if\ \xi \geq 1 \end{cases}$$

$$\text{Variance:} \begin{cases} \dfrac{\sigma^2(b_1 - b_1^2)}{\xi^2}, if\ \xi \neq 0, \xi < \dfrac{1}{2} \\ \dfrac{\sigma^2\pi^2}{6}, if\ \xi = 0 \\ \infty, if\ \xi \geq \dfrac{1}{2} \end{cases}$$

$$\text{Skewness:} \begin{cases} \dfrac{b_3 - 3b_1b_2 + 2b_1^3}{(b_2 - b_1^2)^{3/2}}, if\ \xi \neq 0 \\ \dfrac{12\sqrt{6}\zeta(3)}{\pi^3}, if\ \xi = 0 \end{cases}$$

$$\text{Kurtosis:} \begin{cases} \dfrac{b_4 - 4b_1 b_3 + 6b_2 b_1^2 - 2b_1^4}{(b_2 - b_1^2)^2}, & if\ \xi \neq 0 \\ \dfrac{12}{5}, & if\ \xi = 0 \end{cases}$$

Where,

$b_p = \Gamma(1 - p\xi),\ p \in \{1, \dots, 4\}$;

γ – Euler constant ($\approx 0{,}577$)[147];

$\zeta(t)$ – Riemann zeta function[148];

$\Gamma(t)$ – gamma probability density function[149].

These moments are estimated concurrently using numerical iteration[150] via maximum likelihood. In particular, the maximum likelihood estimator in GEV distribution is evaluated by an iteration procedure to maximize the likelihood $\prod_{i=1}^{n} b_{\mu,\sigma,\xi}(x|\theta)$ over the three parameters μ, σ, and ξ simultaneously. In the iterative approach, linear combinations of ratios of spacings[151] are used as an initial value of the estimation.

The dependence structure of individual bank expected losses is estimated. In particular, the non-parametric, multivariate dependence function between the marginal distributions of expected losses is defined as:

$$\Upsilon(\omega) = \min\left\{1, max\left\{n\left(\sum_{j=1}^{n} \Lambda_{j=1}^{m} \frac{y_{i,j}}{\omega_j \hat{y}_{\cdot j}}\right)^{-1}, \omega, 1-\omega\right\}\right\}$$

$$\hat{y}_{\cdot j} = \sum_{i=1}^{n} \frac{y_{i,j}}{n}$$

$$0 \leq \max(\omega_1, \dots, \omega_{m-1}) \leq \Upsilon(\omega_j) \leq 1.$$

Where,

$\Upsilon(\cdot)$ – convex function ($\Upsilon(0) = \Upsilon(1) = 1$);

$\hat{y}_{\cdot j}$ – reflects the average marginal density of all expected loss values ($i \in n$);

Λ – the smallest ratio of extreme densities across all banks.

---

[147] Kaczkowski, S. (2021). On a generalization of Euler's constant. Surveys in Mathematics and its Applications.

[148] Waldschmidt, M. (2017). An introduction to the Riemann zeta function. CIMPA-ICTP Research School.

The Riemann-zeta function is given in the following form: $\zeta(t) = \sum_{n=1}^{\infty} \frac{1}{n^t}$.

[149] Capinski, M., & Kopp, E. (1998). Measure, Integral and Probability. Springer-Verlag.

The gamma function takes the following form: $\Gamma(t) = \int_0^{\infty} x^{t-1} e^{-x} dx$.

[150] Numerical iteration is a method of sequentially computing and updating model parameters to approach optimal values.

[151] In linear combination of ratios of spacings, the difference between the ordered observations is obtained. Logarithmic ratios are compiled by comparing the spacings around the high and low values.

By combining the marginal distributions of expected losses across banks, the multivariate extreme value distribution is determined:

$$G_{t,m}(x) = \exp\left\{-\left(\sum_{j=1}^{m} y_{t,j}\right)\Upsilon_t(\omega)\right\}.$$

The probability density function of the multivariate extreme value distribution is expressed as follows:

$$g_{t,m}(x) = \hat{\sigma}_{t,m}^{-1}\left(\left(\sum_{j=1}^{m} y_{t,j}\right)\Upsilon_t(\omega)\right)^{\hat{\xi}_{t,m}+1}\exp\left\{-\left(\sum_{j=1}^{m} y_{t,j}\right)\Upsilon_t(\omega)\right\}.$$

The unknown parameters are estimated by maximizing the following likelihood function:

$$\prod_{j=1}^{m} g_{t,m}(x|\theta)$$

The lognormal likelihood function is determined as the logarithm of the product of probability density functions. In this case, the maximum likelihood estimate of the value θ_0 is evaluated:

$$\sum_{j=1}^{m} lng(x|\theta)$$
$$\hat{\theta}_{MLE} = \underset{\theta\epsilon\Theta}{argmax}\,\hat{l}(\theta|x) \to \theta_0$$

The unknown parameters are determined at the maximum of the log-likelihood function.

The joint expected shortfall is obtained as conditional tail expectation. In particular, the expected shortfall represents the expected value of financial losses on assets that exceed the level of $VaR_{\alpha=0,95}$:

$$ES_a = E[X|X > VaR_a] = \frac{1}{1-F(VaR_a)}\int_{VaR_a}^{\infty}(1 - F(x))dx = \frac{1}{1-a}\int_a^1 VaR_a\,da.$$
$$VaR_a = \inf\{x: F(x) \geq a\}$$

Multivariate expected shortfall at the quantile $(0 < a < 1)$ corresponding to the distribution function F of VaR are calculated as follows:

$$ES_{t,\tau,m,a} = -E\left[z_t|z_t \geq G_{t,\tau,m}^{-1}(a) = VaR_{t,a}\right]$$

$$= -\frac{1}{a} \int_0^a G_{t,\tau,m}^{-1}(x)dx$$

$$G^{-1}(a) = \inf\left(x\,\middle|\,G(x \geq a)\right)$$

Where,

ES – expected shortfall;

$G^{-1}(a)$ – quantile corresponding to probability;

z_t – joint potential losses.

The value of VaR for expected shortfall is determined as follows:

$$VaR_{t,a} = \sup\left\{G_{t,\tau,m}^{-1}(a)\,\middle|\,Pr\left[z_t > G_{t,\tau,m}^{-1}(a)\right] \geq a = 0.95\right\}.$$

In particular, the point estimate of joint potential losses in a certain period is determined:

$$G_{t,\tau,m}^{-1}(a) = \hat{\mu}_{t,m} + \frac{\hat{\sigma}_{t,m}}{\hat{\tilde{\xi}}_{t,m}}\left(\left(-\frac{\ln(a)}{\Upsilon_t(\omega)}\right)^{-\hat{\tilde{\xi}}_{t,m}} - 1\right).$$

Expected shortfall is a coherent risk measure[152] defined as a real functional on a space of random variables that satisfy the following axioms:

1) for all X and Y, $v(X + Y) \leq v(X) + v(Y)$;
2) if $X \leq Y$ then, $v(X) \leq v(Y)$;
3) for positive constant λ, $v(\lambda X) = \lambda v(X)$;
4) for constant c , $v(X + c) = v(X) + c$.

As the final outcome of the Systemic Conditional Claims Analysis model, the value of multivariate expected shortfall is considered. In conducting Systemic Conditional Claims Analysis for the banking system, banks' systemic importance, stock exchange listing, and the availability of required time-series data are taken into account.

---

[152] Lam, T., Verma, A., Low, B., & Jaillet, P. (2023). Risk-Aware Reinforcement Learning with Coherent Risk Measures and Non-linear Function Approximation.

Table 5. Solvency Top-down Macro Stress Test Tool

Basic parameters	A total of 35 banks, 7 of which are D-SIBs, were taken into account. As of July 1, 2025, the assets of banks included in the macro stress test constituted 100% of the assets of the banking system.
	All banks must comply with the capital adequacy requirements set by the CBU.
Stress test horizon	3 years (from H1 2025 to H1 2028)
Assumptions	Dynamic balance:
	− The amount of total loans and other bank assets, including securities issued by the Ministry of Finance or CBU, securities of private organizations, claims on other banks, and the CBU, increases based on the scenarios of the annual loan outstanding growth;
	− Asset composition changes during the stress test period;
	− Banks form their own capital from retained earnings.
Macroeconomic scenarios	Macroeconomic scenarios do not represent forecasts of the indicators. Instead, high-impact risks (tail risks) that have a very low probability of occurring are designed to construct adverse scenarios and assess the resilience of banks in Uzbekistan.
	In the baseline scenario, the future state of the economy is projected based on the continuation of current economic trends.
	The internal and external shocks (tail risks) that have a low probability of materializing in the future but have a high negative impact on the banking system are taken into account in the adverse scenario.
	In the adverse scenario, the real GDP growth rate is estimated using the GaR model. In this context, the financial cycle index and the lagged value of real GDP are used as factors affecting economic growth. To fully reflect the risks, an additional shock of three SD is applied to the financial cycle index when assessing the real GDP growth rate under the adverse scenario.
	The loan growth rate under the adverse scenario is determined to be equal to the nominal GDP growth rate, calculated based on the product of the inflation rate and the real GDP growth rate.
	Loan and deposit interest rates in UZS and FX are estimated through models, incorporating the effect of the CBU policy rate.
	The annual values of macroeconomic indicators for future periods under the scenarios are converted into quarterly values using cubic spline interpolation for use in the satellite models.

Regulatory standards	Capital adequacy requirements are set for total regulatory capital, CET1 and Tier 1, and the minimum requirement is established for the leverage ratio.
	Banks use a standardized approach[153] in calculating RWA for credit risk.
	Assets are classified into five different groups according to their quality, and the following provisions are created for them as determined by the CBU[154]:
	– 1% for "standard" assets;
	– 20% for "substandard" assets;
	– 25% for "non-satisfactory" assets;
	– 50% for "doubtful" assets;
	– 100% for "loss" assets.
Methodology and risks	Based on macroeconomic scenarios, the components of the profit and loss module are evaluated.
	Credit risk. The PD of the loan portfolio denominated in national currency and FX is estimated for future periods under the macroeconomic scenario through satellite models.
	In assessing the PD in national currency, its lagged value and scenario-based values of GDP growth and the real lending interest rate in national currency are used.
	The PD in FX is estimated for future periods using its lagged value, as well as scenario-based values of exchange rate and GDP growth.
	In the baseline and adverse scenarios, the volume of loan losses is calculated by multiplying the outstanding loan balance, PD and LGD.
	The provision coverage shortfall of the loan portfolio is used as the measure of LGD. In this context, the share of net loans in total loans, calculated after deducting the established provisons, is considered as the provision coverage shortfall.
	Market and currency risk. According to current regulations in Uzbekistan, banks are not required to revalue securities in their possession at market prices. Therefore, the book value of securities is reflected at base prices, and changes in market interest rates do not affect the value of securities.
	However, the current regulation mandates the creation of reserves for securities that do not generate income for a certain period. Thus, the creation of additional reserves for securities of private organizations in the adverse scenario is considered. Furthermore, the macro stress test incorporates the profit or loss arising from the revaluation of assets and liabilities deonominated in FX. This assessment is based on the banks' disclosed currency positions and reflects the impact of fluctuations in the exchange rate.
	NII. The ratio of NII to interest-bearing assets is estimated using satellite models for both national currency and FX.

[153] Bank for International Settlements. Calculation of RWA for credit risk, standardized approach.

[154] O'zbekiston Respublikasi Markaziy banki boshqaruvining 2021 yil 19 noyabrdagi "Tijorat banklarida aktivlar sifatini tasniflash va aktivlar bo'yicha ehtimoliy yo'qotishlarni qoplash uchun zaxiralar shakllantirish hamda ulardan foydalanish tartibi to'g'risidagi nizomga o'zgartirish va qo'shimchalar kiritish haqida"gi 27/7–sonli qarori.

	The ratio of NII in national currency to interest-bearing assets is estimated for future periods based on its lagged value as well as scenario-based values of loan growth rate, the net interest margin in UZS (the difference between loan and deposit interest rates) and the real GDP growth. To estimate the projected values of the ratio of NII in FX to interest-bearing assets in future periods based on scenarios, the indicator's lagged value, interest rates on loans and deposits in FX as well as exchange rate are used. The amount of NII in UZS and FX is determined by multiplying the total interest-bearing assets by the net interest margin percentage, which is estimated using satellite models. **NNII.** The ratio of NNII to total assets is estimated for future periods using a satellite model based on the scenario-based values of GDP growth and the exchange rate. The amount of NNII is calculated by multiplying total assets by the ratio of NNII to total assets, as estimated through a satellite model. **Operating expenses.** Since the ratio of operating expenses to total assets remained almost unchanged in previous periods, the growth of operating expenses for future periods is projected to follow the same growth rate as total assets. The growth rate of total assets is set to be the same as the growth rate of interest-bearing assets, which account for a large share of total assets. **Dividends.** Dividend payments for future periods are taken into account for banks whose NPAT is positive. The dividend payout ratio from NPAT is determined for each bank based on the dividend payout indicators of previous periods.

Capital requirements	Capital adequacy requirements set by the CBU for commercial banks[155]:
	    – CET1 ratio is 8% of RWA
	    – Tier 1 ratio is 10% (the CCoB is 3% of RWA)
	    – CAR is 13% of RWA.
	
	If the amount of Tier 2 capital exceeds 100% of the amount of Tier 1 capital, the excess amount is not included in the regulatory capital. In addition, provisions for loans of "standard" classification, included in Tier 2 capital, should not exceed 1.25% of RWA.
	
	The minimum requirement for the leverage ratio is 6% [156].

Concentration risk	As an additional shock to the adverse scenario, the impact of the default of the largest borrowers on the banking system's total capital is considered. In this context, the LGD of 50% is assumed for the outstanding loans of defaulted large borrowers.

---

[155] O'zbekiston Respublikasi Markaziy banki boshqaruvining 2021 yil 11 yanvardagi "Tijorat banklari kapitalining monandliliga qo'yiladigan talablar to'g'risidagi nizomga o'zgartirish va qo'shimchalar kiritish haqida"gi 28/22–sonli qarori.

[156] O'zbekiston Respudlikasi Markaziy banki boshqaruvining 2018 yil 31 martdagi "Tijorat banklari kapitalining monandligiga qo'yiladigan talablar to'g'risidagi nizomga o'zgartirish va qo'shimchalar kiritish haqida"gi 12/21–sonli qarori.

Asset Price Volatility Risks	The impact of a sharp decline in asset prices on the quality of the banks' loan portfolios and total capital is assessed as an additional shock in the adverse scenario. A sudden fall in asset prices lowers the market value of collateral used for securing loans, increasing the probability of loan losses for banks. In this context, the rise in the LTV ratio, caused by the lower market value of properties serving as collateral for mortgage and car loans issued by banks, is taken into account. In addition, it is assumed that borrowers may default on loans with LTV ratio exceeding 120% as a result of the sharp drop in house and car prices.
Contagion risk	In the adverse scenario, contagion risk is evaluated using the losses-tied-to-capital and unrecoverable-losses approaches: – In the approach, where losses from bank defaults are tied to capital, the extent of bank's losses from contagion risk is influenced by the defaulting bank's CAR. The lower the failing bank's CAR, the greater the proportional losses incurred by banks that have financial connections with it, such as those that have provided loans to or placed deposits with defaulting bank. – In the approach, where losses from bank defaults are not recoverable, banks face the loss of all their loans to or deposits placed with a bank with a high probability of default, i.e., a bank with the CAR below the required minimum.
Result	Capital adequacy ratios (CET1, Tier 1 and CAR) and the leverage ratio, are the final results of the macro stress testing conducted for the entire banking system as well as for individual banks.

Table 6. PD of Loans

PD Overview	The PD of loans represents the likelihood that borrowers will fail to repay the loans extended by banks. Loan losses in banks are assessed through the PD of loans. To determine loan losses in subsequent periods under scenario-based analysis, the PD estimated using satellite models is applied.
Time horizon	The PD's initial measurement commenced in Q1 2021, using quarterly data.
Data	A total of 35 banks, 7 of which are D-SIBs, were taken into account. The PD of banks' is determined separately for loans in UZS and FX.
PD calculation	The PD of loans in UZS and FX is calculated at individual banks as follows: $$PD_{i,t} = \frac{NPL_{i,t} - NPL_{i,t-1} + NWO_{i,t}}{PL_{i,t-1}}$$ Where, $PD_{i,t}$ – PD in period t; $NPL_{i,t}$ – the volume of NPLs in period t; $NPL_{i,t-1}$ – volume of NPLs in period $t-1$; $NWO_{i,t}$ – volume of net write-offs in period t.[157]; $PL_{i,t-1}$ – volume of performing loans in period $t-1$.
Criteria for selecting effective indicators	• Existence of a direct correlation with credit risk; • Significance of indicators according to the Sargan-Hansen test; • Absence of autocorrelation among variables.
Used indicators	PD in UZS: • the lagged value of PD in the national currency; • real GDP growth; • real loan interest rate in national currency. PD in FX: • the lagged value of PD in foreign currency; • real GDP growth; • annual change in the UZS-USD exchange rate.
Model selection criteria	• Low estimation error in assessing relationship between dependent and independent variables for short time series; • Absence of Nickell bias[158] between the bank fixed effect and the lagged value of the dependent variable in panel data.

[157] Net write offs represent the difference between loans written off and loans recovered over the past 12 months.

[158] Stephen, N. (1981). Biases in Dynamic Models with Fixed Effects. Econometrica.

Applied models	The PD of the banking system's loan portfolio in UZS and FX is estimated for future periods based on macroeconomic scenarios using satellite models. PD in UZS: Two-steps System Generalized Method of Moments (System GMM) for the Dynamic panel model[159]. PD in FX: Two-steps Difference Generalized Method of Moments (Difference GMM) for the Dynamic panel model[160].
Interpretation of results and loan losses estimation	PD for national currency and FX estimated through models are used to determine the amount of loan losses. Loan losses of the banking system are calculated as the product of outstanding loans, PD and LGD.

Nickell bias is the bias that arises between fixed effects and lagged variable in short time series panel data.

[159] Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. Journal of Econometrics.

[160] Arellano, M., & Bond, S (1991). Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations. The Review of Economic Studies.

Table 7. Cash Flow Factors in Liquidity Stress Test in Baseline and Adverse Scenarios

Indicators of cash inflow and outflow	Baseline scenario	Adverse scenario
Cash inflow indicators		
1. Cash and other cash items	100%	100%
2. Bank's funds in the CBU (excluding mandatory reserve)	100%	100%
3. Amounts due from banks and other financial institutions (up to 181 days)	100%	100%
4. Amounts due from banks and other financial institutions (over 181 days)	50%	50%
5. Government and CBU securities	100%	90%
6. Securities of low-risk countries	85%	85%
7. Securities issued by IMF, WB, ADB, AIIB, EBRD, EIB, EIF, IDB, CEB	100%	100%
8. Securities of leading corporates in low-risk countries	50%	50%
9. Securities of mortgage refinancing organizations	75%	65%
10. Other securities	100%	100%
11. Customers' obligations under letters of credit and trust arrangements, net	100%	100%
12. Customers' obligations under unpaid bank acceptances, net	100%	100%
13. Loans and leases to the CBU, net (up to 181 days)	100%	100%
14. Loans and leases to the CBU, net (over 181 days)	50%	50%
15. Loans and leases to other banks, net (up to 181 days)	100%	100%
16. Loans and leases to other banks, net (over 181 days)	50%	50%
17. Loans and leases extended to customers, net	50%	25%
18. Securities purchased under REPO transactions	100%	100%
19. Unrealized gain on revaluation of derivative instruments (without maturity)	0%	0%
20. Unrealized gain on revaluation of derivative instruments (term)	100%	100%
21. FX trading and currency positions	100%	100%
22. Other assets (without maturity)	0%	0%
23. Other assets (term)	100%	100%
24. Collateralized HQLA	100%	100%
Cash outflow indicators		
1. Households demand deposits	5%	20%
2. Households deposits pledged as collateral for loans (up to 181 days)	100%	100%
3. Households deposits pledged as collateral for loans (over 181 days)	50%	50%
4. Other deposits pledged as collateral for loans (up to 181 days)	100%	100%
5. Other deposits pledged as collateral for loans (over 181 days)	50%	50%
6. Other demand deposits	40%	50%
7. Term deposits	40%	40%
8. Household deposits	5%	20%
9. Households funds on bank plastic cards	5%	20%
10. Other customers' funds on bank plastic cards	40%	50%
11. Customer deposits under letters of credit	-5%	-20%
12. Other deposits	40%	50%
13. Amounts due to the CBU	40%	40%
14. Other amounts due to the CBU (payment and clearing systems)	25%	25%
15. Amounts due to other banks' correspondent accounts (up to 181 days)	100%	100%
16. Amounts due to other banks' correspondent accounts (over 181 days)	50%	50%
17. Accounts of other banks – Deposits (up to 181 days)	100%	100%
18. Accounts of other banks – Deposits (over 181 days)	50%	50%

Indicators of cash inflow and outflow	Baseline scenario	Adverse scenario
19. Funds due to banks for payments made from bank cards (up to 181 days)	100%	100%
20. Funds due to banks for payments made from bank cards (over 181 days)	50%	50%
21. Other items (up to 181 days)	100%	100%
22. Other items (over 181 days)	50%	50%
23. Outstanding bank acceptances (up to 181 days)	100%	100%
24. Outstanding bank acceptances (over 181 days)	50%	50%
25. Obligations for loans and leases (up to 181 days)	5%	5%
26. Obligations for loans and leases (over 181 days)	2,5%	2,5%
27. Securities issued by the bank (up to 181 days)	100%	100%
28. Securities issued by the bank (over 181 days)	50%	50%
29. Subordinated debt obligations (up to 181 days)	100%	100%
30. Subordinated debt obligations (over 181 days)	50%	50%
31. High quality liquid securities sold under REPO transactions	100%	100%
32. Other securities sold under REPO transactions (up to 181 days)	100%	100%
33. Other securities sold under REPO transactions (over 181 days)	50%	50%
34. Unrealized losses and other deferred income from revaluation of derivative instruments (up to 181 days)	100%	100%
35. Unrealized losses and other deferred income from revaluation of derivative instruments (over 181 days)	50%	50%
36. Clearing transactions (up to 181 days)	100%	100%
37. Clearing transactions (over 181 days)	50%	50%
38. Other obligations (without maturity)	0%	0%
39. Other obligations (from 1 day to 181 days)	100%	100%
40. Other obligations (over 181 days)	50%	50%
41. Off-balance sheet liabilities	5%	20%

Table 8. Financial Stability Measures in Uzbekistan as of July 1, 2025

Measure	Tool	Applicable norm
Ensuring liquidity in the banking system	Share of HQLA in total assets	10%
	Instant liquidity ratio	25%
	LCR	100%
	NSFR	100%
Maintaining capital adequacy in the banking system	CAR	13%
	Tier 1 ratio	10%
	CET 1 ratio	8%
	CCoB	3% (as part of regulatory requirements)
Reducing leverage and risk appetite in the banking system	RWA	Based on the annual interest rate and other indicators
	Leverage ratio	6%
Reducing dollarization	Ban on issuing FX loans to individuals	Loans in FX are not granted
	Differentiated mandatory reserve requirements	4% for the national currency 10.5% for the FX
	LCR in FX	100%
	NSFR in FX	100%
Debt burden mitigation	DSTI	50%
	Daily limit of interest payments on a loan or microdebt in relation to the principal outstanding	0.3%
	Differentiated RWA	In line with LTV and DSTI ratios on mortgages and car loans
Mitigating risks	Bank's maximum exposure limit for one borrower or a group of interconnected borrowers	25% of the bank's Tier 1 capital
	The maximum amount of unsecured credit risk of a bank attributable to a single borrower or group of related borrowers	5% of bank's Tier 1 capital
	A limit on the total amount of all major risks of the bank	Up to 5 times the bank's Tier 1 capital
	A limit on the maximum amount of risk per affiliated person	25% of the bank's Tier 1 capital
	Maximum exposure limit for all affiliated persons	50% of the bank's Tier 1 capital

Source: CBU.

Table 9. Capital Requirements and Buffers Across Countries as of July 1, 2025, % of RWA

Country	Minimum capital requirements			Capital buffer requirements			
	CET1[161]	Tier 1[162]	CAR	CCoB	CCyB	SyRB	D-SIB buffer
Albania	6.75	9	12	2.5	0.25	0	0.5–1.5
Austria	4.5	6	8	2.5	0	0.5–1	0.45–1.75
Belgium	4.5	6	8	2.5	1	6	0.75–1.5
Bulgaria	4.5	6	8	2.5	2	3	0.5–1
Canada	4.5	6	8	2.5	0	0	1
Croatia	4.5	6	8	2.5	1.5	1.5	0.25–2.5
Czech	4.5	6	8	2.5	1.25	0.5	0.5–2.5
Denmark	4.5	6	8	2.5	2.5	7	1–3
Estonia	4.5	6	8	2.5	1.5	0	0.5-2
Finland	4.5	6	8	2.5	0	1	0.5–2.5
France	4.5	6	8	2.5	1	0	0.25–1.5
Georgia	4.5	6	8	2.5	0.5	0	0.5–3
Germany	4.5	6	8	2.5	0.75	1	0.25–2
Greece	4.5	6	8	2.5	0	0	1–1.25
Hong Kong	4.5	6	8	2.5	0.5	0	1–2.5
Hungary	4.5	6	8	2.5	1	0	0.5–2
Iceland	4.5	6	8	2.5	2.5	2	3
Ireland	4.5	6	8	2.5	1.5	0	0.5–1.5
Italy	4.5	6	8	2.5	0	1	0.25–1.5
Latvia	4.5	6	8	2.5	1	0	0.25–2
Liechtenstein	4.5	6	8	2.5	0	1	2
Lithuania	4.5	6	8	2.5	1	2	1–2
Luxembourg	4.5	6	8	2.5	0.5	0	0.5–1
Malaysia	4.5	6	8	2.5	0	0	0.5–1
Malta	4.5	6	8	2.5	0	1.5	0.438–2
Moldova	5.5	7.5	10	2.5	0	1	0.5–1.5
Montenegro	4.5	6	8	2.5	0.5	1.5	1.25–2
Netherlands	4.5	6	8	2.5	2	0	0.25–2
New Zealand	4.5	7	9	3.5	0	0	2
North Macedonia	4.5	6	8	2.5	1.5	0	1–3.5
Norway	4.5	6	8	2.5	2.5	4.5	1–2
Poland	4.5	6	8	2.5	0	0	0.25–2
Portugal	4.5	6	8	2.5	0	4	0.25-1
Romania	4.5	6	8	2.5	1	0–2	0.5–2.5
Saudi Arabia	4.5	6	8	2.5	0	0	0.5–2.5
Slovakia	4.5	6	8	2.5	1.5	0	0.25–2
Slovenia	4.5	6	8	2.5	1	0.5	0.25–1.25
Spain	4.5	6	8	2.5	0	0	0.25–1.25
Sweden	4.5	6	8	2.5	2	3	1
United Kingdom	4.5	6	8	2.5	2	0	1–2

Sources: National authorities and the European Systemic Risk Board.

---

[161] The minimum requirement for Tier 1 capital includes the minimum requirement for CET 1 capital.

[162] The minimum requirement for regulatory capital (8%) includes the minimum requirement for Tier 1 capital (6%).

Table 10. Current and Announced Positive CCyB Rates, % of RWA

Country	Buffer rate as of July 1, 2025	Scheduled buffer rate in the upcoming period
Albania	↑ 0.25	31.12.2025: ↑0.5
Armenia	↑ 1.75	
Australia	→ 1	
Austria	→ 0	
Belgium	→ 1	
Bulgaria	→ 2	
Chile	→ 0.5	
Cyprus	→ 1	14.01.2026: ↑1.5
Croatia	→ 1.5	
Czech	→ 1.25	
Denmark	→ 2.5	
Estonia	→ 1.5	
France	→ 1	
Georgia	↑ 0.5	15.03.2026: ↑0.75 15.03.2027: ↑1
Germany	→ 0.75	
Greece	→ 0	01.10.2025: ↑0.25
Hong Kong	→ 0.5	
Hungary	↑ 1	
Iceland	→ 2.5	
Ireland	→ 1.5	
Italy	→ 0	
Latvia	↑ 1	
Lithuania	→ 1	
Luxembourg	→ 0.5	
Moldova	→ 0	30.01.2026: ↑0.5
Montenegro	↑ 0.5	01.01.2026: ↑1
Netherlands	→ 2	
North Macedonia	→ 1.5	01.08.2025: ↑1.75 01.10.2026: ↑2
Norway	→ 2.5	
Poland	→ 0	25.09.2025: ↑1 30.09.2026: ↑2
Portugal	→ 0	01.01.2026: ↑0.75
Romania	→ 1	
Singapore	→ 0	
Slovakia	→ 1.5	
Slovenia	→ 1	
South Korea	→ 1	
Spain	→ 0	01.10.2025: ↑0.5 01.10.2026: ↑1
Sweden	→ 2	
Switzerland	→ 0	
United Kingdom	→ 2	

Sources: National authorities.

Glossary

Capital buffer for D-SIBs is the additional capital requirement implemented to increase the resilience of banks identified as systemically important to unexpected shocks or losses that may occur during their operation. The higher solvency of systemically important banks and their higher resilience strengthens the stability and security of the banking system and the economy in general.

Capital buffers are requirements formed as part of the Common Equity Tier 1 (CET1) capital and introduced in addition to the regulatory capital standards to increase banks' resilience to various shocks.

CCyB is a capital requirement designed to counter procyclicality in the financial system. When the cyclical systemic risk is judged to be increasing, institutions should accumulate capital to create buffers that strengthen the resilience of the banking sector during periods of stress when losses materialize. This will help maintain the supply of credit to the economy and dampen the downswing of the financial cycle. The CCyB can also help dampen excessive credit growth during the upswing of the financial cycle.

Deleveraging is a process undertaken by companies or banks to reduce the amount of total debt. The objective of deleveraging is—most often—to minimize risk when the deleveraging is voluntary. It is also used to avoid bankruptcy when done as a result of a change in financial conditions.

Financial cycle can be considered economic fluctuations amplified by—or stem directly from – the financial system. It typically manifests as a co-movement between credit aggregates and asset prices with a possible impact on real economic developments.

Financial stability is the capability of the financial system, i.e., financial institutions and market infrastructures, to withstand possible shocks and reduce the possibility of disruptions in the performance of financial intermediation functions. Achieving financial stability means ensuring the stability of the entire financial system, not individual financial institutions.

Fire sales occur when an owner of an asset is forced to sell it at a discounted price to meet creditor demands.

Guided discretion is an approach that considers not only automatic rules, but also relies on quantitative indicators and relevant qualitative information. Given that MPP tools can generate multiple effects on the financial system, the MPP decisions on the activation/deactivation and calibration of MPP tools should not be based entirely on strict rules, allowing the macroprudential authorities a high degree of flexibility and the possibility of entering qualitative factors in the decision-making process.

Leverage ratio is a capital adequacy tool that measures a bank's Tier 1 capital divided by its total exposures; it is used to monitor a bank's overall risk. Its principal objective is to constrain the maximum degree to which a bank can leverage its equity. It differs from capital adequacy requirements by not taking into account risk-weighted assets, and it is a simple and effective tool against the disproportionate excess of assets relative to capital.

Liquidity coverage ratio promotes the short-term resilience of a bank's liquidity risk profile. It does this by ensuring that a bank has an adequate stock of unencumbered high-quality liquid assets (HQLA) that can be converted into cash easily and immediately in private markets to meet its liquidity needs for a 30-calendar day liquidity stress scenario. It will improve the banking sector's ability to absorb shocks from financial and economic stress, whatever the source, thus reducing the risk of spillover from the financial sector to the real economy.

LGD is a bank's financial loss when the borrower cannot repay its debt; the share of a loan or security's nominal value that would not be recovered following default.

Macro stress test is a set of tools used to measure the resilience of the entire financial system to systemic risk factors, including severe but possible macroeconomic indicators in adverse scenarios, and to ensure that it has sufficient capital and liquid assets to maintain stability in the event of a stress situation.

MPP tools are measures and limits designed to achieve MPP's ultimate and intermediate objectives.

MPP is defined as limiting systemic risks and mitigating their negative consequences, increasing the stability of the financial system by introducing buffers that ensure the stable functioning of the economy. MPP is characterized by reference to three defining elements: (i) Its objective: to limit systemic risk–the risk of widespread disruptions to the provision of financial services that have serious negative consequences for the economy. (ii) Its scope: the focus is on the financial system as a whole (including the interactions between the financial and real sectors) as opposed to individual components (that take the rest of the system as given). (iii) Its instruments and associated governance: it uses primarily prudential tools calibrated to target the sources of systemic risk.

NSFR is complementary to the LCR in that it aims to ensure funding resilience over a longer time horizon, requiring banks to fund long-term assets with long-term liabilities and thus limit the degree of maturity mismatch.

Regulatory arbitrage is when financial market participants gain comparative advantages by moving and (or) starting their activities in relatively less regulated segments of the market to circumvent restrictions.

Risk profile represents the investor's attitude to risk and is important for effective asset allocation in the investment portfolio. Individual investors, financial institutions, or companies have unique risk profiles as their risk appetites may differ according to psychological factors, loss-absorbing capacity, investors' age, and other investment objectives. Usually, investors can be divided into conservative, rational, and aggressive types based on the risk profile.

Structural (cross-sectional) dimension of systemic risk is a risk arising due to the distribution of risks throughout the financial system and interconnectedness between financial institutions and common exposures

Systemic risk is the risk of widespread disruption to the provision of financial services caused by an impairment of all or parts of the financial system, which can cause serious negative consequences for the real economy. By mitigating systemic risks, MPP measures ultimately aim

to reduce the frequency and severity of financial crises. Systemic risk is generally recognized as having two dimensions: structural (cross-sectional) and time dimension.

SyRB can be used if other MPP tools, like the CCyB or the D-SIB buffer, do not address systemic risks. The buffer can address general systemic risks or risks related to a subset of bank exposures.

Systemically important banks are banks on which the banking system's stability depends; they are banks whose disorderly failure, because of their size, complexity, and systemic interconnectedness, would cause significant disruption to the broader financial system and economic activity.

Time dimension of systemic risk refers to procyclicality, which is based on a collective tendency by financial and non-financial economic agents to increase risk exposures during the boom phase of a financial cycle and become overly risk-averse during the bust phase. Procyclicality manifests itself in credit and liquidity cycles induced by excessive leverage in financial firms (but also corporations and households) and excessive maturity mismatches in the financial sector.

"Too big to fail" institution is so systemically important that it cannot be allowed to fail, as its failure would cause instability across the financial system and disrupt the economy at large.

Transmission channels of MPP are channels through which MPP decisions can impact the resilience of the financial sector and the credit cycle. The tightening of MPP tools is transmitted to the financial system and the real economy through price, quantity, resilience, and expectations channels.

Contributing Authors

Author	Position	Department
Mr. Uchkun Djumanazarov	Director	Financial Stability
Mr. Shokhrukh Makhmudov	Senior Economist	Financial Stability
Mr. Ibrokhim Rayimjonov	Senior Economist	Financial Stability
Mr. Diyor Muminov	Lead Economist	Financial Stability
Mr. Nurzod Yusupov	Lead Economist	Financial Stability
Mr. Sardorjon Urolov	1-category Economist	Financial Stability
Mr. Sanjar Abduganiev	1-category Economist	Financial Stability