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EXPERIENCE IN IMPROVING BANKING EFFICIENCY IN DEVELOPING COUNTRIES

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Abstract. This article analyses policy measures aimed at improving banking-sector efficiency and stability in Kazakhstan, Türkiye, Malaysia, and China, along with the changes observed during 2016–2025. In Kazakhstan, the non-performing loan ratio declined from 9.3% in 2017 to 2.9% in 2023, while the cost-to-income ratio decreased during 2016–2024, not because of a reduction in costs but because income grew faster than costs. In Chinese commercial banks, the provision coverage ratio increased from 176.4% in 2016 to 205.2% in 2025, while the net interest margin declined from 2.10% in 2020 to 1.42% in 2025. In Uzbekistan, at the end of 2025, the specific provision coverage ratio stood at 52.6%, while the cost-to-income ratio was 52.3% under the Central Bank's definition and 36.3% under the comparable definition (lower bound). Based on the analysis, recommendations are developed.

Keywords: banking sector, efficiency, financial stability, non-performing loans, provision coverage, cost-to-income ratio, digital banks, international experience.

Annotatsiya. Ushbu maqolada Qozog'iston, Turkiya, Malayziya va Xitoyda bank sektori samaradorligi hamda barqarorligini oshirishga qaratilgan chora-tadbirlar, shuningdek, 2016–2025-yillar davomida kuzatilgan o'zgarishlar tahlil qilinadi. Qozog'istonda muammoli kreditlar ulushi 2017-yildagi 9,3 foizdan 2023-yilda 2,9 foizgacha kamaygan. Shu bilan birga, 2016–2024-yillarda xarajatlarning daromadlarga nisbati xarajatlarning qisqarishi hisobiga emas, balki daromadlarning xarajatlarga nisbatan tezroq o'sishi natijasida pasaygan. Xitoy tijorat banklarida kreditlar bo'yicha shakllantirilgan zaxiralarning muammoli kreditlarni qoplash koeffitsiyenti 2016-yildagi 176,4 foizdan 2025-yilda 205,2 foizgacha oshgan, sof foiz marjasi esa 2020-yildagi 2,10 foizdan 2025-yilda 1,42 foizgacha pasaygan. O'zbekistonda 2025-yil yakuniga ko'ra, maxsus zaxiralarning muammoli kreditlarni qoplash koeffitsiyenti 52,6 foizni tashkil etgan. Xarajatlarning daromadlarga nisbati Markaziy bank metodologiyasi bo'yicha 52,3 foizni, taqqoslanadigan metodologiya bo'yicha esa 36,3 foizni (quyi chegara) tashkil etgan. Tahlil natijalari asosida tegishli tavsiyalar ishlab chiqilgan.

Kalit so'zlar: bank sektori; samaradorlik; moliyaviy barqarorlik; muammoli kreditlar; zaxiralar bilan qoplash koeffitsiyenti; xarajatlarning daromadlarga nisbati; raqamli banklar; xalqaro tajriba.

Аннотация. В статье анализируются меры, направленные на повышение эффективности и устойчивости банковского сектора Казахстана, Турции, Малайзии и Китая, а также изменения, наблюдавшиеся в период 2016–2025 годов. В Казахстане доля проблемных кредитов сократилась с 9,3% в 2017 году до 2,9% в 2023 году. При этом в 2016–2024 годах отношение операционных расходов к доходам снизилось не вследствие сокращения расходов, а благодаря более высоким темпам роста доходов по сравнению с расходами. В коммерческих банках Китая коэффициент покрытия проблемных кредитов сформированными резервами увеличился со 176,4% в 2016 году до 205,2% в 2025 году, тогда как чистая процентная маржа снизилась с 2,10% в 2020 году до 1,42% в 2025 году. В Узбекистане по итогам 2025 года коэффициент покрытия проблемных кредитов специальными резервами составил 52,6%. Отношение расходов к доходам составило 52,3% согласно методологии Центрального банка и 36,3% согласно сопоставимой методологии (нижняя граница). На основе результатов анализа разработаны соответствующие рекомендации.

Ключевые слова: банковский сектор; эффективность; финансовая устойчивость; проблемные кредиты; коэффициент покрытия резервами; отношение расходов к доходам; цифровые банки; международный опыт.

INTRODUCTION

Banking-sector efficiency determines how cost-effectively and safely savings are reallocated throughout an economy. The need to study international experience arises from two targets established by the banking-sector reform strategy adopted in 2020: by 2025, banks without state ownership were expected to account for 60% of sector assets (up from 15%), and at least three strategic foreign investors were expected to enter the

sector (PF-5992, 2020)[1]. In February 2026, the strategy was approved in a new edition (PF-21, 2026)[2].

The target established for 2025 under PF-5992 has not yet been fully achieved. As of 1 January 2026, banks with state ownership (defined as a state share of at least 50% in charter capital) accounted for 63.5% of total banking-sector assets, while other banks held 36.5% (Central Bank, 2026). Since the latter category also includes banks with state shareholdings below 50%, the share of banks without state ownership cannot exceed 36.5%. The IMF identifies the state as the dominant participant in the financial sector and reports that, at the end of 2023, the proportion of Stage 3 non-performing loans was twice as high as the corresponding regulatory reporting measure (IMF, 2025).

Other developing countries have encountered similar challenges. Kazakhstan addressed banking-sector vulnerabilities through the resolution of insolvent banks; China identified high-risk institutions through rating-based assessments; Malaysia implemented Basel III standards; and Türkiye introduced measures affecting the composition of bank balance sheets. The objective of this study is to analyse these mechanisms and the accompanying developments during 2016–2025 and to formulate recommendations for Uzbekistan.

LITERATURE REVIEW

The relationship between ownership structure, reform, and bank efficiency has been extensively examined in transition economies. An analysis of 225 banks across 11 transition countries during 1996–2000 found that privatisation alone was insufficient to improve efficiency, whereas banks owned by strategic foreign investors demonstrated better performance (Bonin et al., 2005). A study of 289 banks in 15 Eastern European countries found that costs tended to decline during the early stages of reform but increase during later stages (Fries and Taci, 2005). In China, Berger et al. (2009) reported that, during 1994–2003, the four largest state-owned banks were the least efficient, while foreign-owned banks were the most efficient. Jiang et al. (2013), using data for 1995–2010, found that joint-stock and city commercial banks outperformed state-owned commercial banks and that privatisation improved performance.

Country-specific studies also demonstrate that excluding asset quality from efficiency assessments can lead to misleading conclusions. Using monthly data for Kazakhstan from March 2007 to December 2010, Glass et al. (2014) found that an increase in non-performing loans lowered the cost frontier and interpreted this finding as consistent with the skimping-on-credit-monitoring hypothesis. Assaf et al. (2013) assessed Turkish banks during 2002–2010, treating non-performing loans as undesirable outputs, and demonstrated that excluding them substantially distorted estimates of efficiency and productivity. Sufian (2009) identified particularly high levels of inefficiency among Malaysian banks one year after the 1997 Asian financial crisis.

The effects of regulation, competition, and technology have also been investigated. Using data from 72 countries during 1999–2007, Barth et al. (2013) found that stricter restrictions on banking activities were negatively associated with efficiency, while more stringent capital requirements demonstrated a weak positive association. Fungáčová et al. (2013) found no statistically significant association between competition and cost efficiency among Chinese banks during 2002–2011, suggesting that measures promoting competition do not necessarily reduce efficiency. Lee et al. (2021), using data for 2003–2017, reported that financial technology innovation improved cost efficiency in the Chinese banking sector.

Domestic studies have similarly examined banking efficiency in Uzbekistan. Nigmonov (2010) reported a decline in average overall efficiency during 2004–2006, largely attributable to technical rather than scale inefficiency. Xannayev (2024) calculated that, over 1999–2023, return on assets was lower in state-owned banks than in private and foreign-owned banks. Berdiyev (2025) associated the relatively weaker performance of major state-owned banks with ownership incentives requiring further improvement and proposed approaches to effective privatisation. Kasimova (2025) described substantial growth in banking assets, an increasing share of deposits, and fluctuations in profitability during 2017–2025. International experience in remote banking services has also been examined (Mamadiyarov, 2021).

In our assessment, the international studies cited above primarily employ bank-level data for econometric efficiency analysis, with the most recent observations ending in 2017, while domestic studies focus on indicators specific to Uzbekistan. Policy measures implemented in developing countries over the past decade and the accompanying changes have received comparatively limited attention. This article aims to address that research gap.

1 https://lex.uz/docs/-4811025
2 https://lex.uz/uz/docs/-8050769

RESEARCH METHODOLOGY

The empirical base consists of official statistics published by supervisory institutions: the National Bank of Kazakhstan (2024; 2025); the Banking Regulation and Supervision Agency of Türkiye (BDDK, 2026); Bank Negara Malaysia (2026); the National Financial Regulatory Administration of China and the People's Bank of China (NFRA, 2026; PBC, 2019); and the Central Bank of Uzbekistan (Statistical Bulletin, 2026). Information on the measures implemented was obtained from these institutions' reports and official decisions.

Limitations in data coverage are described in the table notes. Because the Turkish bulletins used in the study contain only end-of-January balances, annual profitability and cost-to-income ratios cannot be calculated for Türkiye.

Banking efficiency and stability were assessed using the non-performing loan ratio, provision coverage ratio, capital adequacy ratio, return on assets, return on equity, net interest margin, and cost-to-income ratio. For Uzbekistan, the latter indicator was calculated using two definitions:

$$XDN_{(MB)} = (FsX + OX)/(FM + FsD) \times 100 \quad (1)$$

$$XDN_{(T)} = OX/(FM + FsD - FsX) \times 100 \quad (2)$$

where the first indicator represents the cost-to-income ratio under the Central Bank's definition, while the second represents the ratio under the comparable definition. FsX denotes non-interest expenses, OX denotes operating expenses, FM denotes net interest income, and FsD denotes non-interest income.

Under the methodology of the Statistical Bulletin, non-interest expenses include fees paid and losses arising from foreign exchange, trading, and investment operations, while non-interest income includes gross gains from these operations (Central Bank, 2026). Accordingly, the ratio in Equation (1) is not directly equivalent to its international counterpart. The comparable ratio in Equation (2) was therefore used for international comparisons. Since the composition of non-interest expenses is not disclosed, Equation (2) is treated as a lower bound and Equation (1) as an upper bound. For Kazakhstan, a narrow definition consistent with Equation (2) was calculated alongside the broader official ratio. Other definitions are detailed in the table notes.

The research employs comparative analysis, grouping, time-series analysis, and comparisons of indicators before and after the introduction of specific measures. These comparisons do not establish causality. The mechanisms examined in the study are classified by the author into three groups (Figure 1).

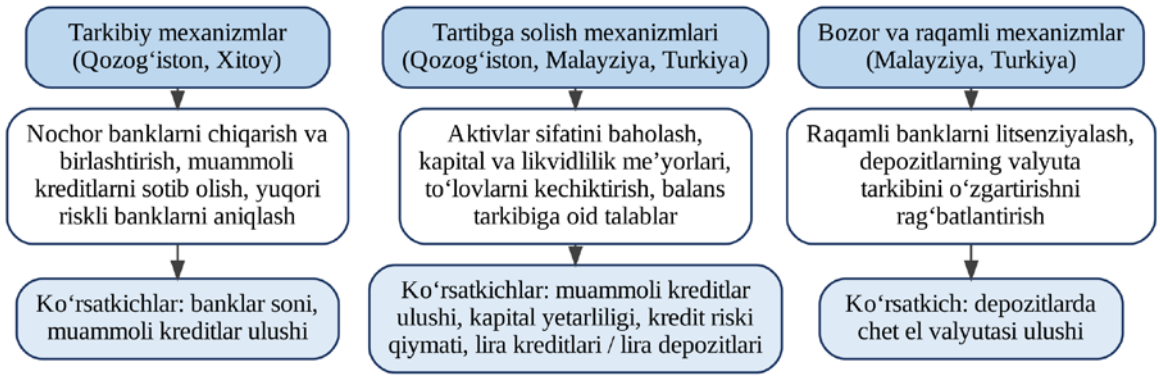


Figure 1. Classification of mechanisms for improving banking-sector efficiency and stability[3]

Artificial intelligence (AI) tools were used to a limited extent, accounting for approximately 10% of the overall research preparation process. Their use was primarily confined to language refinement, technical editing, and structural support. The selection of research methods, analysis and interpretation of findings, formulation of scientific conclusions, and development of recommendations were carried out independently by the author. The author assumes full responsibility for the accuracy, originality, and scientific integrity of the research.

ANALYSIS AND RESULTS

Key indicators for the banking sector of Kazakhstan are presented in Table 1.

3 Source: Developed by the author.

Table 1
Key indicators of the banking sector of Kazakhstan (year-end)

Indicators	2016	2017	2018	2019	2020	2021	2022	2023	2024
Number of banks	33	32	28	27	26	22	21	21	21
Net provision expense, KZT trillion	0,36	1,21	0,30	0,55	0,60	0,11	0,46	0,53	0,65
Net profit (loss), KZT trillion	0,40	−0,06	0,64	0,79	0,73	1,29	1,47	2,18	2,55
Non-performing loan ratio	6,7	9,3	7,4	8,1	6,9	3,3	3,4	2,9	–
Capital adequacy	16,3	21,8	21,9	24,2	27,0	23,4	21,7	21,5	–
Cost-to-income (broad definition)	42,9	34,4	42,4	36,1	44,7	40,3	35,4	32,4	32,9
Cost-to-income (narrow definition)	35,6	28,2	31,2	26,4	27,5	29,1	25,1	23,2	23,8
Return on assets (ROA)	1,6	−0,3	2,6	3,0	2,5	3,7	3,6	4,5	4,5
Return on equity (ROE)	14,9	−2,1	21,2	23,8	19,2	30,4	30,0	36,1	32,4

Note: Ratios were calculated from unrounded data. Non-performing loans are those overdue by more than 90 days. The cost-to-income ratio is shown under broad and narrow definitions; ROA and ROE were calculated using net profit divided by average opening and closing balances.

Source: Author's calculations from balance-sheet, income and expense, and financial-stability data of the National Bank of Kazakhstan and the Agency for Regulation and Development of the Financial Market.

The number of banks declined from 35 at the end of 2015 to 21 in 2024. The main recognition of losses occurred in 2017, when net provisions increased from KZT 0.36 trillion in 2016 to KZT 1.21 trillion. The banking sector recorded a loss of KZT 62.3 billion, and the non-performing loan ratio reached 9.3%. The ratio subsequently declined to 2.9% in 2023, while the capital adequacy ratio increased from 16.3% in 2016 to 21.5% in 2023.

According to the National Bank of Kazakhstan, the licences of five insolvent banks were revoked during 2016–2018 (National Bank of Kazakhstan, 2020). The independent asset quality review conducted in 2019 did not identify a capital shortfall (National Bank of Kazakhstan, 2021). From 2016 to 2024, the cost-to-income ratio declined from 42.9% to 32.9% under the broad definition and from 35.6% to 23.8% under the narrow definition. Return on assets (ROA) increased from 1.6% to 4.5%. The components of these changes are presented in Figure 2.

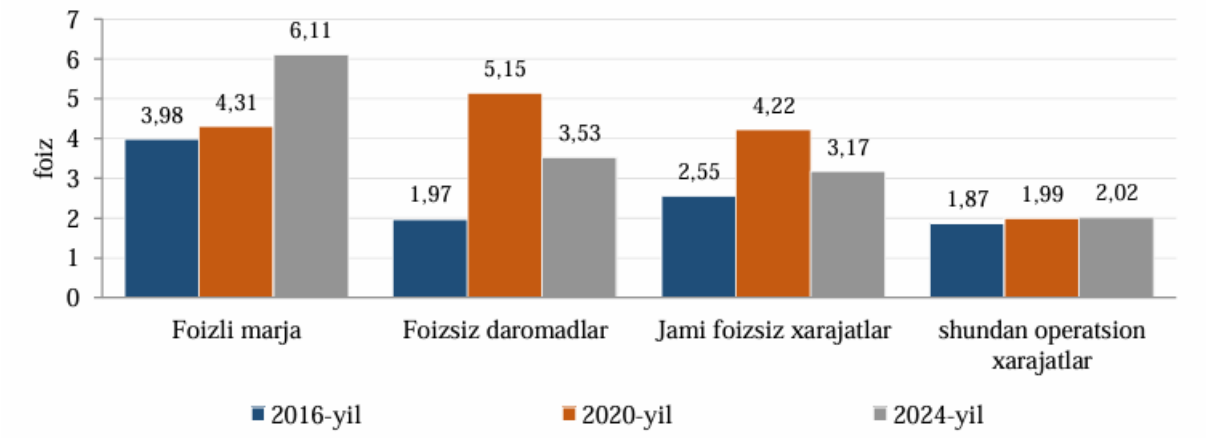


Figure 2. Income and expense components as a percentage of average assets in Kazakhstan's banks[4]

During 2016–2024, net interest income as a share of average assets rose from 3.98% to 6.11%, non-interest income from 1.97% to 3.53%, total non-interest expenses from 2.55% to 3.17%, and operating expenses within these from 1.87% to 2.02%.

4 Source: Author's calculations using National Bank of Kazakhstan data.

Table 2
Key indicators of Chinese commercial banks (year-end, %)

Indicators	2016	2017	2018	2020	2021	2022	2023	2024	2025
Non-performing loan ratio	1,74	1,74	1,83	1,84	1,73	1,63	1,59	1,50	1,50
Provision coverage	176,4	181,4	186,3	184,5	196,9	205,8	205,1	211,2	205,2
Capital adequacy	13,3	13,7	14,2	14,7	15,1	15,2	15,1	15,7	15,5
Return on assets (ROA)	–	–	–	0,77	0,79	0,76	0,70	0,63	0,60
Return on equity (ROE)	–	–	–	9,5	9,6	9,3	8,9	8,1	7,8
Net interest margin	–	–	–	2,10	2,08	1,91	1,69	1,52	1,42
Cost-to-income ratio	–	–	–	31,2	32,1	34,0	35,3	35,6	35,6

Note: Figures for 2016–2018 are sourced from the People's Bank of China and those for 2020–2025 from the NFRA; data for 2019 are unavailable. Postal Savings Bank was added to coverage from 2019 and capital adequacy was calculated under a revised methodology from 2024. Profitability and net interest margin were not reported for 2016–2018.

Source: Compiled by the author from data of the People's Bank of China and NFRA.

In our view, the cost-to-income ratio in Kazakhstan declined because income grew faster than expenses, rather than because expenses per unit of assets decreased. Therefore, a lower cost-to-income ratio does not, by itself, demonstrate cost savings. The available data are insufficient to attribute income growth to banking-sector rehabilitation measures.

The indicators for Chinese commercial banks are presented in Table 2.

The non-performing loan ratio in Chinese commercial banks increased from 1.74% in 2016 to 1.84% in 2020 before declining to 1.50% in 2025. The provision coverage ratio stood at 176.4%, 184.5%, and 205.2% in these years, respectively. The capital adequacy ratio increased from 13.3% in 2016 to 15.1% in 2023 and reached 15.5% in 2025 under the new rules. The People's Bank of China reported that the ratio of loans overdue by more than 90 days to non-performing loans declined by 5.13 percentage points in 2018, reaching 87.36%, and attributed this change to more prudent loan classification practices (PBC, 2019). Differences across bank types are illustrated in Figure 3.

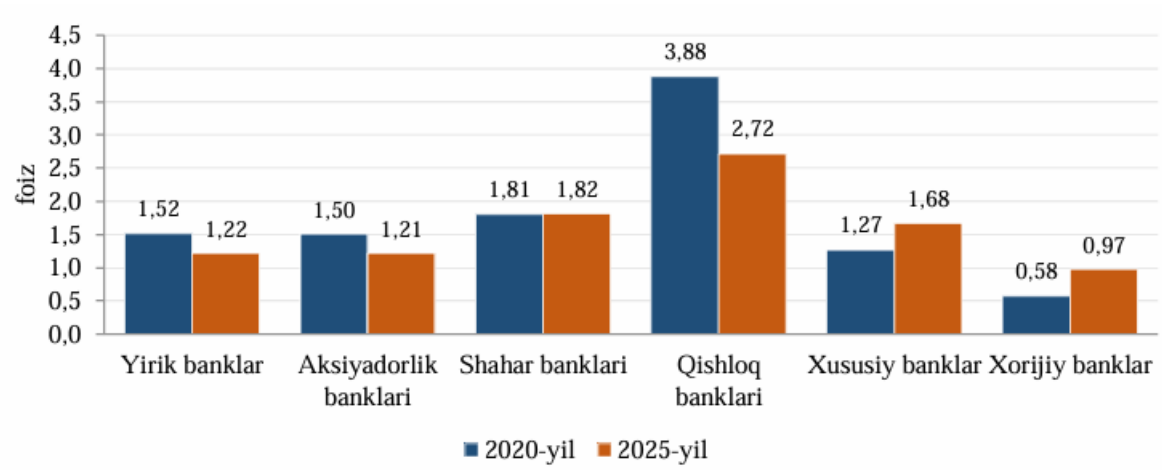


Figure 3. Non-performing loan ratios of Chinese commercial banks by bank category (%)[5]

In 2025, non-performing loans accounted for 1.22% of loans at large commercial banks and 2.72% at rural commercial banks; corresponding provision coverage was 241.4% and 159.3%. ROA at rural commercial banks declined from 0.62% in 2020 to 0.44% in 2025. In our view, this supports differentiated supervision by bank group, since aggregate averages can conceal weakness in particular groups.

Although several stability indicators improved, profitability at the system level declined: the net interest margin fell from 2.10% in 2020 to 1.42% in 2025, the cost-to-income ratio increased from 31.2% to 35.6%, and return on assets (ROA) declined from 0.77% to 0.60%.

Indicators for Malaysia's banking system are summarised in Table 3.

5 Source: Compiled by the author from NFRA quarterly supervisory statistics.

Table 3
Key indicators of the Malaysian banking system (year-end, %)

Indicators	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total capital adequacy	16,5	–	17,4	18,3	18,5	18,9	18,8	18,5	18,3	18,1
Liquidity coverage ratio	124,3	134,9	143,2	149,1	148,2	153,4	151,5	161,0	160,7	154,8
Impaired loans ratio	1,61	1,55	1,48	1,53	1,56	1,67	1,72	1,65	1,44	1,37
Provision coverage	–	–	131,4	126,4	–	123,3	118,6	119,2	129,5	127,2
Cost-to-income ratio	–	–	–	46,3	44,3	48,1	44,5	48,2	47,2	45,3
Return on assets (ROA)	1,35	1,45	1,43	1,49	1,10	–	–	–	–	–

Source: Compiled by the author from Bank Negara Malaysia, Financial Stability and Payment Systems Report (2016–2018) and Financial Stability Review (2019–2025).

The total capital adequacy ratio (based on initially reported figures) increased from 16.5% in 2016 to 18.1% in 2025, while the liquidity coverage ratio rose from 124.3% to 154.8%. The cost-to-income ratio fluctuated between 44.3% and 48.2% during 2019–2025.

During the pandemic, provisioning expenses increased ahead of recognised impairment. At the end of June 2020, payments had been deferred on 84.4% of household loans, excluding credit cards. The cost of credit risk increased from 7 basis points in 2019 to 65.2 basis points in 2020. Stage 2 loans, for which credit risk had increased significantly without impairment being recognised, reached 11.0% in 2021, while the share of impaired loans at year-end ranged from 1.37% to 1.72% during 2019–2025 (Figure 4).

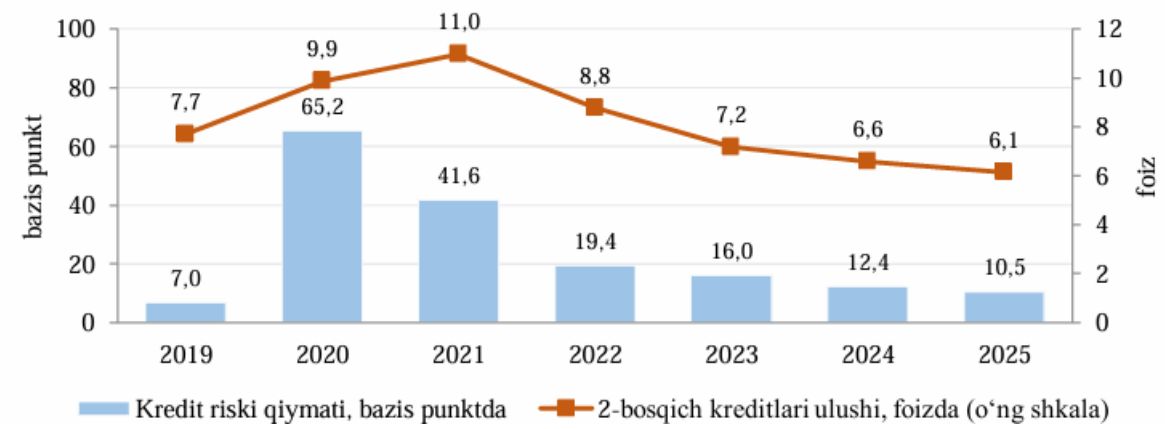


Figure 4. Cost of credit risk and the share of Stage 2 loans in Malaysia

Source: Compiled by the author from Bank Negara Malaysia data collections.

On 29 April 2022, Bank Negara Malaysia announced that five out of 29 applications for digital banking licences had been selected and that applicants would receive a 12–24-month preparatory period (Bank Negara Malaysia, 2022). Because the sources reviewed contain no information on their subsequent outcomes, the impact of this measure cannot be assessed.

Indicators for the Turkish banking sector are presented in Table 4.

Table 4
Key indicators of the Turkish banking sector (end-January, %)

Indicators	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Non-performing loan ratio	3,2	2,9	4,0	5,3	4,1	3,1	2,0	1,6	1,9	2,6
Provision coverage	77,5	75,1	68,6	66,1	75,5	79,8	86,7	81,8	76,3	75,1
Total provisions / gross loans	–	3,4	4,4	5,2	5,4	5,1	4,6	3,9	3,3	3,5
Capital adequacy	15,2	16,8	17,1	18,4	18,4	18,5	17,0	16,9	17,7	16,8
Securities / assets	12,7	12,4	12,8	14,8	16,8	16,5	16,8	17,2	16,0	14,5
Lira loans / lira deposits	138,5	150,3	139,2	131,7	152,7	139,3	107,6	90,7	83,3	91,0

Source: Author’s calculations from BDDK monthly bulletins (2017–2026).

The non-performing loan ratio increased from 2.9% in January 2018 to 5.3% in January 2020, declined to 1.6% in January 2024, and was 2.6% in January 2026. Since January 2018, the bulletin has reported the three stages of expected credit loss provisions: total provisions as a share of gross loans rose from 3.4% at that date to 5.4% in January 2021. Changes in funding structure are shown in Figure 5.

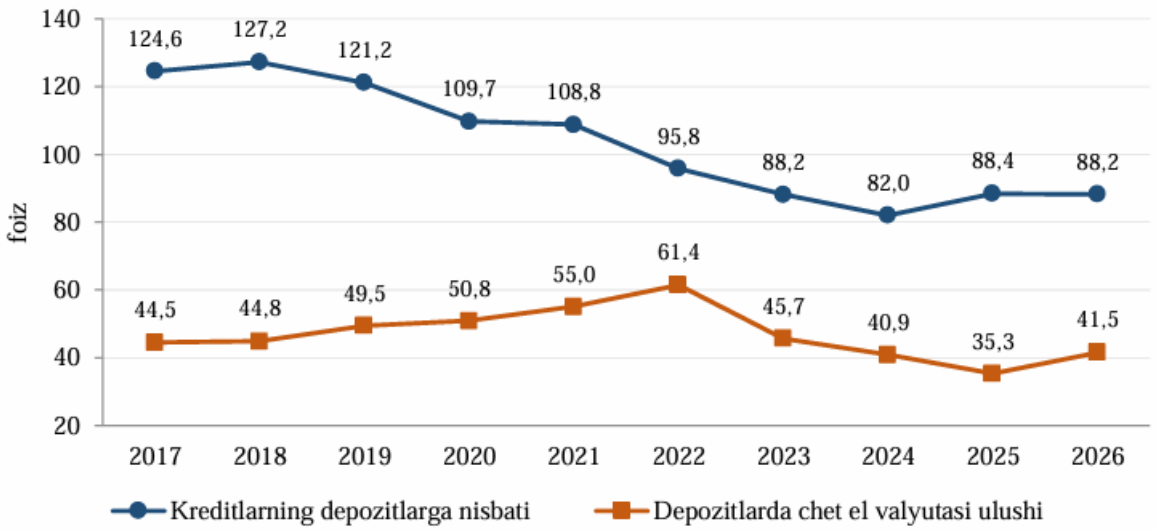


Figure 5. Loans-to-deposits ratio and foreign-currency share of deposits in Türkiye (end-January, %)[6]

From 1 May 2020, an asset ratio requirement for deposit banks, based on loans and securities relative to deposits, was initially set at a minimum of 100%. The requirement was withdrawn effective 31 December 2020 (BDDK, 2020). The ratio of lira-denominated loans to lira-denominated deposits increased from 131.7% in January 2020 to 152.7% in January 2021. On 21 December 2021, support measures for depositors converting foreign-currency deposits into lira-denominated term deposits were announced (TCMB, 2022). The share of foreign-currency deposits declined from 61.4% in January 2022 to 35.3% in January 2025 before increasing to 41.5% in January 2026. These figures do not, by themselves, establish the effectiveness of the measures: the changes observed in 2020 coincided with the pandemic, the foreign-currency deposit share is also influenced by exchange-rate movements, and annual profitability indicators are unavailable.

A comparison with Uzbekistan is presented in Table 5.

First, at the end of 2025, Uzbekistan's non-performing loan ratio (2.99%) was close to those of Kazakhstan (2.89% in 2023) and Türkiye (2.57% in January 2026). However, the specific provision coverage ratio was 52.6%, compared with 76.0% in Kazakhstan and 75.1% in Türkiye. The IMF reported that, under international standards, the share of non-performing loans in 2023 was twice the figure reported under regulatory standards (IMF, 2025). Consequently, provision coverage calculated under international standards could be lower. Whether this difference persisted at the end of 2025 remains a matter of supposition.

Second, conclusions regarding cost-to-income ratios depend on the definitions applied. Under the Central Bank's definition, the ratio in Uzbekistan increased from 45.1% in 2020 to 52.3% in 2025, whereas the comparable ratio remained almost unchanged, at 36.5% and 36.3%, respectively. This discrepancy reflects the increase in non-interest expenses from UZS 3.5 trillion to UZS 27.8 trillion and does not necessarily indicate a deterioration in cost control (Table 5).

Table 5
Banking-sector indicators for Uzbekistan and four comparison countries (%)

Indicators	Uzbekistan 2020	Uzbekistan 2024	Uzbekistan 2025	Kazakhstan 2023	Kazakhstan 2024	China 2025	Malaysia 2025	Türkiye 2026-yil yanvar
Non-performing loan ratio	2,09	3,97	2,99	2,89	–	1,50	1,37	2,57

6 Source: Author's calculations from BDDK monthly bulletins.

Specific provision coverage	–	45,4	52,6	76,0	–	–	–	75,1
Capital adequacy	18,4	17,4	18,3	21,5	–	15,5	18,1	16,8
ROA (sof foyda bo‘yicha)	1,79	0,99	1,85	4,55	4,52	0,60	–	–
ROE	10,3	6,6	12,4	36,1	32,4	7,8	–	–
Net interest income / average assets	4,47	4,87	4,53	5,68	6,11	–	–	–
Cost-to-income (Central Bank definition)	45,1	51,9	52,3	–	–	–	–	–
Cost-to-income (comparable definition)	36,5	35,6	36,3	23,2	23,8	35,6	45,3	–
Operating expenses / average assets	2,59	3,38	3,61	1,91	2,02	–	–	–
Loans / deposits	241,4	172,7	144,8	84,7	–	80,1	–	88,2
Foreign-currency share of deposits	43,1	25,1	20,9	–	–	–	–	41,5

Source: Author’s calculations from the Statistical Bulletin of the Central Bank of Uzbekistan (March 2026), National Bank of Kazakhstan, NFRA, Bank Negara Malaysia and BDDK.

In 2024, the comparable cost-to-income ratio was 35.6% in Uzbekistan, compared with 23.8% in Kazakhstan. In 2025, Uzbekistan’s lower-bound ratio (36.3%) was close to China’s (35.6%) and below Malaysia’s (45.3%), whereas the upper-bound ratio (52.3%) exceeded both. Operating expenses as a share of average assets increased in Uzbekistan from 2.59% in 2020 to 3.61% in 2025, exceeding Kazakhstan’s 2.02% in 2024 (Uzbekistan: 3.38%). Third, the loans-to-deposits ratio declined in Uzbekistan from 241.4% at the end of 2020 to 144.8% at the end of 2025, although it remained higher than in Kazakhstan (84.7% in 2023), China (80.1%), and Türkiye (88.2% in January 2026; 127.2% in January 2018).

CONCLUSION AND RECOMMENDATIONS

The experience of the four countries provides the following conclusions. First, in Kazakhstan, during a period characterised by loss recognition, the resolution of insolvent banks, and independent asset quality assessment, the number of banks declined from 35 in 2015 to 21 in 2024, while the non-performing loan ratio decreased from 9.3% in 2017 to 2.9% in 2023. Second, a declining cost-to-income ratio does not necessarily indicate cost savings. Kazakhstan’s ratio decreased from 42.9% to 32.9% during 2016–2024 because income grew faster than costs, while operating expenses as a share of average assets increased from 1.87% to 2.02%.

Third, Malaysia recognised provisioning expenses before impairment materialised: the cost of credit risk increased to 65.2 basis points in 2020 and declined to 19.4 basis points by 2022, when the year-end impaired-loan ratio reached its peak of 1.72%. Since loan payments were deferred during 2020, the relatively low level of impairment cannot be attributed solely to provisioning. In China, the non-performing loan ratio at rural commercial banks in 2025 was 2.2 times that of large commercial banks. Fourth, Türkiye experienced significant changes in its banking-sector balance-sheet composition around the introduction of policy measures. The share of

foreign-currency deposits declined from 61.4% in January 2022 to 35.3% in January 2025 before increasing to 41.5% in January 2026. However, the available data are insufficient to establish a direct relationship between these movements and the measures implemented. Fifth, at the end of 2025, Uzbekistan had a lower specific provision coverage ratio (52.6%) than Kazakhstan and Türkiye and a higher loans-to-deposits ratio (144.8%) than Kazakhstan, China, and Türkiye. Its lower-bound comparable cost-to-income ratio (36.3%) exceeded Kazakhstan's 23.8% in 2024, while comparisons with China (35.6%) and Malaysia (45.3%) depend on the composition of non-interest expenses (range: 36.3–52.3%).

These findings suggest the following recommendations for Uzbekistan. First, before privatising banks with state ownership, an independent asset quality review should be conducted using a uniform methodology, and identified losses should be absorbed through provisions and capital. In Kazakhstan, the 2019 review covered 87% of banking-sector assets. Second, the provision coverage levels of at least 75% observed in Kazakhstan and Türkiye may serve as benchmarks, although they are calculated under different regulatory frameworks. Accordingly, banks should first disclose non-performing loans and provisions in accordance with IFRS (Stage 3), establish bank-specific schedules for increasing provision coverage, and publish the share of Stage 2 loans and the cost of credit risk on a quarterly basis. Third, provision coverage, profitability, and cost indicators should be reported by bank group, while non-interest income and expenses should be disaggregated into fees, foreign exchange results, and trading outcomes. Cost efficiency should be assessed using a comparable cost-to-income ratio and operating expenses relative to average assets.

Fourth, given the relatively high loans-to-deposits ratio, this indicator should be monitored by bank group, and targets for expanding the deposit base should be incorporated into banks' medium-term strategies. Fifth, Malaysia's approach to digital banking licences, involving competitive selection followed by a 12–24-month preparation period before commencing operations, could be examined as a potential model. Since this study does not assess the outcomes of that approach, gradual implementation would be appropriate.

The research relies on aggregate indicators and does not estimate causal relationships between policy measures and outcomes. Recommendations regarding the Turkish measures are not provided because annual profitability data are unavailable. Future research should employ individual-bank data to estimate the effects of reforms on banking efficiency using econometric methods.

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