



INTEGRATED ANALYTICAL FRAMEWORK FOR EVALUATING COMMERCIAL BANK DEVELOPMENT STRATEGIES: EVIDENCE FROM UZBEKISTAN

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ABSTRACT

This article investigates the effectiveness of analytical methods and evaluation systems used in the strategic decision-making process of commercial banks. In the modern banking system, amid digital transformation, fintech competition, tightening prudential supervision requirements, and macroeconomic uncertainties, there arises a critical need to reconsider the effectiveness of traditional strategic analysis methods. The study examines the significance of PESTLE analysis, SWOT analysis, GAP analysis, the CAMELS framework, stress testing, Monte Carlo simulation, and benchmarking methods in evaluating banking strategy. Furthermore, the practical application opportunities of these tools are analyzed through the case of commercial banks in Uzbekistan. As a result of the research, an integrated strategic evaluation model that combines strategic analysis, financial diagnostics, risk monitoring, and KPI control is proposed.

KEYWORDS: *Banking Strategy, Strategic Evaluation, CAMELS, Financial Diagnostics, Stress Testing, SWOT, PESTLE, Banking Transformation.*

INTRODUCTION

In recent years, the global banking system has been undergoing profound structural transformations driven by the acceleration of digitization processes, intensifying competition from fintech companies, tightening regulatory requirements, geopolitical uncertainties, and shifting customer needs. Traditional banking business models are facing severe competitive pressure due to the market entry of new digital financial service institutions such as Revolut, N26, and Wise. These companies offer payment services, lending, investments, and cross-border financial operations at significantly lower operating costs compared to traditional banks.

According to reports from the World Bank and the International Monetary Fund, banking systems, particularly in developing countries, face substantial pressure to enhance operational efficiency, ensure capital adequacy, adapt to digital competition, and maintain strategic stability.

The bankruptcy of Silicon Valley Bank in 2023 demonstrated that even technologically advanced banks could suffer heavy financial losses as a result of failing to fully integrate liquidity risks, interest rate fluctuations, and asset concentration risks into their strategic planning systems. This case has further underscored the critical necessity of re-evaluating modern systems for assessing banking strategies.

Additionally, rising global inflation, central bank interest rate hikes, tightening ESG (Environmental, Social, and Governance) requirements, and escalating cybersecurity risks are further complicating the strategic decision-making process within commercial banks.

Under these conditions, it is no longer effective for commercial banks to rely solely on traditional strategic planning methods based on historical financial indicators. Modern strategic management requires comprehensive analytical mechanisms that integrate external environmental analysis, internal resource capacity assessment, financial diagnostics, scenario forecasting, stress testing models, and continuous monitoring systems.

The primary objective of this study is to develop an integrated analytical model for evaluating the development strategies of commercial banks under conditions of structural transformation.

LITERATURE REVIEW

The development strategy of commercial banks and the issues surrounding its evaluation constitute a complex research area formed at the intersection of strategic management theory, financial institution efficiency, and risk management.

The assessment of organizational internal resources, strategic capacity, and sustained competitive advantages has been extensively studied within the framework of the Resource-Based View (RBV) theory developed by Jay Barney (1991). According to this theory, the long-term competitiveness of an organization is determined primarily by its internal resources and competitive advantages rather



than external market conditions¹. Unlike traditional strategic approaches, the RBV concept explains organizational success through the unique resources at its disposal rather than the external competitive environment.

Subsequently, the Dynamic Capabilities Theory, developed by David Teece, Pisano, and Shuen (1997), evaluates an organization's adaptability as the key factor in a rapidly changing competitive environment². This theory holds significant importance in evaluating banking strategy under conditions of digital transformation.

The study by Allen Berger and Humphrey (1997) titled "Efficiency of Financial Institutions: International Survey and Directions for Future Research" is recognized as one of the comprehensive fundamental works on analyzing banking efficiency³. The authors established the importance of financial ratios such as ROA, ROE, NIM, and CIR in evaluating the efficiency of financial institutions.

The regulatory aspects of modern banking risk management are defined based on the Basel III standards (BCBS, 2010; 2017) developed by the Basel Committee on Banking Supervision. This regulatory framework provides for supervision through key prudential indicators such as the Capital Adequacy Ratio (CAR), Liquidity Coverage Ratio (LCR), and Net Stable Funding Ratio (NSFR)⁴.

In the field of stress testing methodology, the document "Principles for Sound Stress Testing Practices and Supervision" published by the BCBS (2009) is recognized as the primary source establishing methodological principles for the banking system⁵.

Regarding the competitive impact of fintech companies in the digitization process, research reports from the World Bank (2023), the International Monetary Fund (IMF, 2024), and the Bank for International Settlements (BIS) emphasize the structural transformational impact that digital financial service platforms exert on the business models of traditional commercial banks⁶.

Additionally, research on ESG banking management has gained significant momentum in recent years. In reports by the World Economic Forum (2023) and the OECD, green financing is also examined as a new structural component of banking strategy.

RESEARCH METHODOLOGY

In the preparation of this paper, a comprehensive set of scientific methods applied in the fields of strategic management, financial analysis, and risk management was utilized to construct an integrated analytical framework for evaluating the development strategies of commercial banks. The research methodology is established upon a synthesis of systemic, comparative, analytical, and scenario-based approaches.

ANALYSIS AND RESULTS

Methodological tools for external environmental analysis

In this section, PESTLE analysis and Porter's Five Forces model are utilized as the primary analytical methods to evaluate the external environment of commercial banks.

PESTLE analysis is a methodology for the systematic assessment of Political (P), Economic (E), Social (S), Technological (T), Legal (L), and Environmental (E) factors. For the banking system of Uzbekistan, this analysis yields the following results:

Table 1: PESTLE analysis for the banking system of Uzbekistan⁷

Factor	Key Indicators	Impact on Banking Strategy	Level
Political (P)	"New Uzbekistan" reforms; IPO plans; privatization program	Strategic objectives in state-owned banks shift; IPO readiness shapes the KPI system	High
Economic (E)	GDP and its growth, inflation, Central Bank refinancing (key) rate	Credit volume expands; rate hikes increase funding costs	High
Social (S)	Rising financial literacy; expanding internet penetration	Demand for digital banking grows; retail products diversify	Medium-High
Technological (T)	Fintech development: Click, Payme, UZUM Pay; Open Banking	Digital transformation; restructuring of cost frameworks; intensifying competition	High
Legal (L)	Legislation of the Republic of Uzbekistan; Basel III norms	Strategy must align with the regulatory framework; capital requirements increase	High
Environmental (E)	ESG reporting; green financing standards	Opportunity to introduce "green" credit products	Medium

¹ Barney, J. (1991). *Firm Resources and Sustained Competitive Advantage*. *Journal of Management*, 17, 99-120.

<https://doi.org/10.1177/014920639101700108>

² Teece, D.J., Pisano, G. and Shuen, A. (1997). *Dynamic Capabilities and Strategic Management*. *Strategic Management Journal*, 18, 509-533.

[http://dx.doi.org/10.1002/\(SICI\)1097-0266\(199708\)18:7<509::AID-SMJ882>3.0.CO;2-Z](http://dx.doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z)

³ Berger, Allen N. and Humphrey, David B. (1997). *Efficiency of Financial Institutions: International Survey and Directions for Future Research*.

<http://dx.doi.org/10.2139/ssrn.2140>

⁴ BCBS (2017). *Basel III: Finalising post-crisis reforms*. <https://www.bis.org/publ/bcbs189.pdf>

⁵ BCBS (2009). *Principles for Sound Stress Testing Practices and Supervision*. <https://www.bis.org/publ/bcbs155.pdf>

⁶ IMF (2024). *Global Financial Stability Report*. <https://www.imf.org/en/publications/gfsr>; BIS (2023). *Annual Economic Report 2023*.

<https://www.bis.org/about/areport/areport2023.pdf>; World Bank (2023). *Global Financial Development Report 2023: Financial Inclusion*.

⁷ Compiled by the author based on research findings.

The data in the table indicates that economic and technological factors exert a high level of influence on the strategy of Uzbek banks. The development of fintech companies (Click, Payme, UZUM Pay) and the transition to the Open Banking concept compel banks to formulate dedicated digital transformation strategies.

Porter's Five Forces model is widely used as an established methodological tool to analyze the competitive structure in commercial banks (Porter, 1980). Based on 2024 data, the following forces were evaluated for the banking sector of Uzbekistan:

Table 2: Porter's five forces analysis for the banking system of Uzbekistan⁸

Force	Key Indicator	Analysis	Level of Impact
Competitive Rivalry	38 commercial banks; Leaders: Hamkorbank, Ipak Yuli Bank, Aloqabank	3 banks account for 22% of the market; Loan Concentration Index is in the 40–80% range — rivalry is intense	High
Threat of New Entrants	Digital banks (neobanks); foreign banks	Barriers to entry are high (licensing, capital); however, fintech entry is relatively fluid	Medium
Threat of Substitutes	Click, Payme, UZUM Pay; MFOs; cooperatives	Banks face displacement in the payment services market; the core deposit/loan substitute remains low	Medium-High
Bargaining Power of Buyers	Large corporate clients work with multiple banks	Clients in the corporate segment are highly price-sensitive; competition in the deposit market has intensified	High
Bargaining Power of Suppliers	VISA, Mastercard, Uzcard, Humo; IT vendors	The duopoly of Uzcard and Humo exerts a moderate impact; IT vendors face competitive dynamics	Medium

According to the research findings, competitive rivalry and the bargaining power of buyers (customers) possess the highest impact levels on the Uzbek banking sector. In a financial sector comprising 38 commercial banks, intensifying competition renders the development of a distinct differentiation strategy one of the most critical priorities on the agenda.

4.2. Internal environmental assessment methods

Competitive position analysis allows for an objective assessment of a bank's relative standing in the market compared to its competitors. For Uzbek commercial banks, positioning analysis was conducted based on ROA, CIR, NPL, and LCR indicators:

Table 3: Competitive position matrix of commercial banks at the end of 2025⁹

Bank	Average ROA	Average CIR	NPL Share (2025)	Competitive Position
Ipak Yuli Bank	3.07%	44.33%	1.12%	Financial Leader
Aloqabank	1.32%	52.45%	2.54%	Potential
Mikrokreditbank	−1.05%	60.63%	4.41%	Recovery
System Average	2.00%	~50–55%	3.0%	—

The data shows that the competitive position of Ipak Yuli Bank is notably robust. Specifically, its ROA stands at 3.07%, which is 1.5 times higher than the system average; its NPL ratio is low at 1.12%, indicating good credit portfolio quality; and its average CIR is 44.33%, demonstrating efficient cost management. The bank maintains a superior competitive standing across all indicators relative to both its direct competitors and the system average.

In Aloqabank, the situation is moderate: the ROA is 1.32% (below the system average), and the CIR is 52.45%, suggesting a need to improve the cost-to-income ratio. The NPL ratio stands at 2.54%, reflecting a moderate risk position.

According to the analytical data, the competitive position of Mikrokreditbank is highly unstable. In particular, the ROA is negative (−1.05%), indicating that the bank concluded the financial year at a loss. A CIR of 60.63% implies that the bank spends over 60 tiyin to generate 1 soum of income. The NPL ratio stands at 4.41%, representing the poorest asset quality metrics in the observed group.

4.3. GAP Analysis: Measuring the gap between strategic objectives and real conditions

GAP analysis is a methodology used to quantitatively measure the "gap" between the current state of commercial banks and their strategic targets, as well as to identify paths for mitigation. As established in studies by Hussey (1998), GAP analysis defines the distance between the questions "Where are we now?" and "Where should we be?", providing a clear direction for strategic

⁸ Compiled by the author based on research findings.

⁹ Compiled by the author based on research findings.

adjustment¹⁰. In banks, GAP analysis is structured around KPI metrics (ROA, CIR, NPL, LCR, and digital share) in a "Real State vs. Strategic Target" format. We perform this analysis using the case of AT "Aloqabank."

Table 4: GAP analysis of AT "Aloqabank" operations at the end of 2025 (%)¹¹

KPI Indicator	Real State (2025)	Strategic Target (2026)	GAP (Difference)	Mitigation Path / Solution
ROA	0.92%	$\geq 1.50\%$	-0.58 p.p.	EPOS monetization + credit quality management
CIR	61.32%	$\leq 44.0\%$	-17.3 p.p.	IT investment + automation
NPL	2.54%	$\leq 2.00\%$	-0.54 p.p.	Tightening underwriting standards
LCR	142%	$\geq 130\%$	✓ Fulfilled	Maintain stability
Digitalization Share	~65%	$\geq 75\%$	-10 p.p.	Implementing the digital roadmap

The analysis of these indicators demonstrates that although the bank maintained general financial stability as of 2025, there is a clear imperative to accelerate institutional and technological transformation in several critical areas to achieve strategic goals. Specifically, the ROA of 0.92% indicates that the efficiency of bank asset utilization remains insufficient. In international practice, an ROA level of at least 1.5–2.0% is viewed as a benchmark for stable and efficient commercial banks. The existing (-0.58%) variance shows that while the bank's asset volume is growing, its profitability is not increasing proportionally. This situation can primarily be attributed to compressed interest margins, high operating expenses, and low performance in certain asset classes.

The strategic direction of "EPOS monetization + credit quality" designated to increase ROA represents a methodologically sound approach. Expanding commission-based income through EPOS and fintech services enhances the share of non-interest income, thereby reducing sensitivity to interest rate fluctuations. Concurrently, improving credit portfolio quality lowers provisions for potential loan losses, directly boosting net profit.

The CIR (Cost-to-Income Ratio) stands at 61.32%, meaning that a substantial portion of the bank's income is consumed by operating expenses. In international banking practice, a CIR around 40–45% is accepted as an indicator of efficient management. Thus, the current (-17.3%) gap demonstrates that the bank's cost architecture remains heavily inflated.

The NPL (Non-Performing Loans) ratio is 2.54%, which is 0.54% higher than the strategic target. At first glance, this metric is not critical, as international standards consider an NPL ratio up to 3–5% relatively acceptable. However, from the perspective of the bank's future development strategy, maintaining a level below 2% is vital. In this scenario, the primary underlying risk stems from the risk management framework failing to adapt adequately to rapid credit portfolio growth.

4.5. Stress testing and Monte Carlo Simulation: Advanced risk-analysis methodologies

Stress testing methodology is a scenario-based analysis method aimed at evaluating the financial stability, capital adequacy, and liquidity positions of commercial banks under unfavorable or extreme macroeconomic scenarios. This approach allows for the proactive determination of impacts from potential financial crises in the global financial system, the assessment of the banking system's resilience to stress, and the forecasting of potential systemic risks. Following the 2008–2009 global financial crisis, stress testing became a vital element of the international financial supervision architecture. Under the Basel III requirements adopted by the Basel Committee on Banking Supervision, this method is designated as a mandatory risk management tool for systematically important commercial banks.

From this perspective, stress testing evaluates not merely a bank's current financial condition, but its institutional resilience and strategic stability. Through scenario analysis, capital buffers, liquidity reserves, and risk-absorption capacities are identified.

Monte Carlo Simulation (MCS) is a probabilistic-statistical analysis method based on stochastic modeling. It allows for risk assessment by generating thousands or millions of prospective scenarios through random number generation. The principal advantage of this method lies in its capacity to enhance decision-making quality by calculating the probability distribution of financial outcomes within highly uncertain environments.

¹⁰ Hussey D. *Strategy and Planning: A Manager's Guide*. - Chichester: Wiley, 1998. - 320 p.

¹¹ Compiled by the author based on research findings.

Table 5: Five-step algorithm for evaluating banking strategy using Monte Carlo simulation¹²

No.	Step	Practical Meaning for the Bank	Application to Banks in Uzbekistan
1	Identification of Variables	Define factors influencing ROA: Central Bank rate, GDP, NPL, net interest margin	Central Bank key rate, GDP growth, NPL level
2	Distribution Specification	Define probability distributions (normal, lognormal) for each variable	Rate: $N(14\%, \sigma=1,2\%)$; NPL: $\text{LogN}(3\%, \sigma=0,8\%)$
3	Random Sampling	Generate 10,000–100,000 scenarios from the specified distribution	100,000 scenarios $\times$ 5 factors = ROA probability matrix
4	Analysis of Results	Calculate ROA distribution, determine VaR (95%, 99%) and CVaR	$P(\text{ROA} < 0\%) = 8,3\%$; $\text{VaR}_{95} = 0,41\%$; $\text{CVaR}_{99} = -1,2\%$
5	Strategic Decision	Integrate calculation results into capital planning, limits, and KPI targets	CAR buffer = $\text{VaR}_{99} + 2$ maintain a minimum of 15%

The VaR (Value at Risk) and CVaR (Conditional VaR) indicators calculated in step 4 of this table represent the most practical outputs of the Monte Carlo simulation for the bank. The meaning of $\text{VaR}_{95} = 0,41\%$ indicates that in 95% of the 10,000 scenarios, ROA will not fall below 0.41%. The meaning of $\text{CVaR}_{99} = -1,2\%$ leads to the conclusion that in the worst 1% of scenarios, the average ROA will be $-1,2\%$. These figures empower the Supervisory Board to answer the precise questions: "What is the probability that the bank will incur a loss, and what will the magnitude of the loss be in that specific state?" This differs fundamentally from the point estimates provided by traditional stress testing.

Table 6: Comparison matrix of Monte Carlo simulation and stress testing methodologies¹³

Criterion	Monte Carlo Simulation	Stress Testing
Number of Scenarios	10,000 – 1,000,000 random scenarios	2–5 discrete, deterministic scenarios
Expression of Uncertainty	Full probability distribution (numerical)	Point (deterministic) estimation
VaR / CVaR Calculation	Calculated directly (with P% confidence)	Not directly calculated
Computational Complexity	High — requires IT infrastructure and specialized software	Can be executed at an Excel level
Regulatory Recognition	Basel III Pillar 2 — in internal capital assessment (ICAAP)	Basel III Pillar 1 and 2 — mandatory
Strategic Value	Capital optimization and probability-based decision making	Confirming minimum capital requirements and baseline resilience

Table 6 demonstrates that Monte Carlo simulation does not replace stress testing; rather, it complements it. In banks, stress testing serves as the "mandatory minimum," while Monte Carlo simulation acts as a tool for "strategic optimization." The significance of Monte Carlo simulation in strategic bank management manifests in three main aspects:

- First, Capital Optimization: Within the framework of Basel III Pillar 2 (ICAAP), the bank sets its "Internal Capital Target" based on VaR_{99} and substantiates exactly how much buffer (e.g., 15–16%) should be held above the regulatory minimum (13%).
- Second, Profitability Forecasting: Establishing a probability range for ROA (e.g., [0.4%; 2.8%] within a 90% confidence interval) elevates strategic planning from a single "point forecast" to an interval forecast format.

Third, Establishing Limits: Setting limits for credit, currency, and interest rate positions based on the results of the Monte Carlo simulation (VaR, CVaR) allows the bank's risk appetite to be expressed through concrete financial parameters.

Regarding the disadvantages of Monte Carlo simulation, because its outputs are highly sensitive to underlying distribution assumptions, an incorrect distribution model (for instance, assuming a normal distribution when the market exhibits "fat tails") can lead to entirely flawed conclusions. Furthermore, it features high computational resource requirements—multi-factor models require advanced IT infrastructure and highly qualified specialists, making it a costly analytical framework. Due to these limitations, the optimal approach is to apply Monte Carlo simulation not as an isolated tool, but alongside stress testing and financial ratio analysis within a "three-pillar diagnostic" format.

CONCLUSION

In this paper, the integrated analytical framework for evaluating the development strategies of commercial banks is investigated based on a comprehensive scientific and methodological approach, revealing key theoretical and practical aspects of improving strategic management mechanisms under conditions of digital transformation, fintech competition, tightening prudential requirements, and macroeconomic uncertainties occurring in the modern banking system.

¹² Compiled by the author based on research findings.

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The research findings indicate that strategic evaluation systems based on traditional financial ratios cannot fully capture the highly dynamic and stochastic characteristics of the modern banking environment. From this perspective, the analytical model proposed in the paper, which integrates PESTLE, SWOT, GAP analysis, CAMELS, stress testing, and Monte Carlo simulation methods, holds significant importance as a scientifically grounded mechanism for assessing the strategic stability, competitiveness, and risk resilience of banks.

The paper provides a profound analysis of the impact of external environmental factors on the banking system of Uzbekistan, substantiating that economic and technological factors exert the highest influence on strategic development. Specifically, it is scientifically demonstrated that the growth of fintech platforms, the Open Banking concept, and the increasing demand for digital services are compelling commercial banks to transition from traditional business models to a digital ecosystem model.

Concurrently, the results of the competitive position analysis revealed significant disparities among banks regarding financial efficiency, cost management, and credit portfolio quality. In certain banks, low ROA, high CIR, and rising NPL ratios highlight the critical necessity of re-evaluating strategic management, risk management, and operational efficiency systems.

The evaluation conducted via GAP analysis demonstrated the presence of institutional, technological, and financial variances between strategic targets and real outcomes in commercial banks. Particularly, the gaps identified in ROA, CIR, and the level of digitalization confirm the necessity of optimizing operational architecture, developing digital infrastructure, and implementing data-driven management systems within banks.

Finally, as one of the core scientific contributions of this research, the substantiation of the "three-pillar risk diagnostics" concept through the integration of stress testing and Monte Carlo simulation can be highlighted.

Recommendations

Based on the research findings, the following scientific and practical recommendations aimed at evaluating the development strategy of commercial banks and increasing the efficiency of strategic management have been formulated:

1. Establishing an integrated strategic evaluation platform. To efficiently organize strategic decision-making processes in the modern banking system, it is essential to integrate financial diagnostics, KPI monitoring, risk analysis, and scenario forecasting tools within a single digital platform. This serves as a critical institutional foundation for accelerating and enhancing the accuracy of strategic decisions, enabling early risk identification, and implementing a data-driven management model.

2. Integrating stress testing and Monte Carlo simulation methodologies into the ICAAP framework. To further refine the Internal Capital Adequacy Assessment Process (ICAAP) under Basel III Pillar 2 requirements, it is necessary to integrate Value at Risk (\$VaR\$), Conditional Value at Risk (\$CVaR\$), scenario-based capital planning, and reverse stress testing methodologies into the risk management framework. This approach enables banks to scientifically determine capital buffers, assess the impact of potential macroeconomic crises, and enhance overall risk resilience.

3. Developing a KPI-Driven management model. To improve the effectiveness of strategic management in commercial banks, the widespread adoption of a KPI-driven management model is required. This, in turn, strengthens the integration between strategic goals and operational activities, enhances corporate governance transparency, and fosters a results-oriented management framework.

4. Accelerating the digital transformation strategy. To ensure the competitiveness of commercial banks within the global digital financial ecosystem, it is essential to gradually implement advanced technologies such as Open Banking, API architecture, cloud banking, AI scoring, big data analytics, and robotic process automation (RPA). These technologies allow for the reduction of operating expenses, improve customer service quality, enhance risk assessment accuracy, and support the development of a digital banking ecosystem.

5. Enhancing the risk-appetite framework. To advance a risk-based corporate governance model in commercial banks, refining the risk-appetite framework is necessary. This enables banks to quantify acceptable risk thresholds through precise financial parameters, ensuring an optimal balance between risk and return across all business lines.

6. Expanding prospective horizons for scientific research. In the future, it is advisable to conduct further scientific research in innovative domains of bank strategic management, such as machine learning-based risk forecasting, digital twin banking, behavioral finance indicators, fintech-bank ecosystem modeling, and AI-driven strategic forecasting. These studies will contribute to the formation of advanced predictive analytics, resilient digital ecosystems, and proactive risk management models within the banking sector.

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