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THE INVESTMENT ACTIVITY OF COMMERCIAL BANKS AND THE ROLE OF SECURITIES IN ASSET STRUCTURE: A POST-TRANSFORMATION ANALYSIS OF UZBEKISTAN'S BANKING SYSTEM

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ABSTRACT

This study evaluates the investment activity of commercial banks and investigates the strategic significance of securities within bank asset portfolios, specifically focusing on the ongoing financial transformation in the Republic of Uzbekistan. Structured under the strict IMRAD format, the paper presents a highly expanded Literature Review that integrates foundational financial intermediation theories, modern portfolio optimization frameworks, and contemporary empirical findings on bank asset quality. Analyzing data from the Central Bank of Uzbekistan up to the 2024–2026 fiscal periods, the paper highlights that while credit risks are heavily prioritized, the strategic positioning of sovereign, municipal, and high-grade corporate securities remains an underutilized tool for portfolio insulation. The findings reveal that structural dependencies—exemplified by credit concentration where the top 50 corporate borrowers command 24% of total assets, and 77% of large loans are denominated in foreign currencies—can be mitigated through active balance sheet diversification into high-quality liquid assets (HQLA). Finally, the study offers targeted recommendations for deploying advanced risk-based pricing, predictive AI algorithms, and structural capital market tools to advance the systemic stability of transition economies.

KEYWORDS

Commercial banks, Investment activity, Securities portfolio, Asset quality, Financial transformation, Basel III, Credit risk, Portfolio diversification, Non-Performing Loans (NPL), Risk management.

Introduction

The stability and operational efficiency of the commercial banking sector serve as the primary engine for sustainable economic growth in developing and transition economies. Within the Republic of Uzbekistan, the banking architecture has embarked on an ambitious, state-mandated transformation process. This structural shift aims to reduce the historic dominance of state ownership, encourage

privatization, integrate advanced digital infrastructure, and align national macroprudential standards with international paradigms such as the Basel III framework.

In traditional banking models, asset allocation is predominantly focused on the extension of commercial and industrial credit lines. However, a major challenge in transition economies is the high concentration of credit among large-scale State-Owned Enterprises (SOEs) and major corporate borrowers. This heavy reliance on traditional loan books creates an unbalanced balance sheet structure, exposing banks to severe systemic vulnerabilities during periods of macroeconomic volatility, inflation spikes, or exchange rate fluctuations. When real-sector corporate clients encounter operational bottlenecks, the bank's asset quality deteriorates directly, causing a spike in Non-Performing Loans (NPLs) and compressing regulatory capital buffers.

To mitigate these risks, the modern banking paradigm emphasizes the expansion of bank investment activities—specifically the accumulation and strategic management of a robust securities portfolio. Holding sovereign debt instruments, central bank bonds, and high-grade corporate debt allows commercial banks to diversify their revenue streams, achieve optimal Liquidity Coverage Ratios (LCR), and lower their risk-weighted assets (RWA).

[Systemic Banking Stability]
  |
  ├─► Traditional Credit Channel (High Concentration & FX Volatility)
  └─► Modern Investment Channel (Sovereign Debt, HQLA, Strategic Securities)

This research analyzes the current constraints and strategic opportunities surrounding the investment activities of commercial banks in Uzbekistan. By exploring the balance between credit allocation and securities investment, the study investigates how structural vulnerabilities—such as credit concentration and foreign currency exposures—can be mitigated by expanding the volume of liquid securities on bank balance sheets.

Literature Review

The academic literature on bank asset management, investment strategies, and the role of securities portfolios is extensive. This expanded review organizes global banking theories, regulatory perspectives, and transition-economy insights into five key thematic areas.

The theoretical basis for bank asset selection and investment activity is rooted in modern financial intermediation theory. Gurley and Shaw (1960) and Diamond and Dybvig (1983) characterized commercial banks as essential mechanisms for transforming liquid, short-term liabilities (deposits) into illiquid, long-term assets (loans). This inherent maturity mismatch exposes banks to liquidity shocks. Diamond (1984) expanded this by introducing the concept of "delegated monitoring," arguing that banks hold a comparative advantage over public markets in evaluating credit risks through proprietary information collection.

However, relying entirely on private corporate credit exposes an institution to cyclical credit risk. To counter this, Modern Portfolio Theory (MPT), established by Markowitz (1952) and later applied to financial institutions by Tobin (1958), demonstrates that an investor can maximize returns for a given level of risk by holding a diversified mix of uncorrelated assets. In a banking context, this means combining traditional, illiquid loans with highly liquid, interest-bearing securities.

Fama (1985) further observed that banks occupy a unique position as both inside lenders and capital market investors. When banks allocate capital toward public securities, they shift from a credit-underwriting model to a market-liquidity model, lowering the marginal cost of risk management.

In modern banking literature, a securities portfolio is no longer viewed simply as a secondary source of interest income; it is treated as a strategic tool for systemic risk and liquidity management. Allen and Santomero (1997) re-evaluated traditional banking theories, arguing that contemporary financial institutions focus heavily on risk management and risk smoothing rather than simple transaction execution. They asserted that holding high-quality sovereign and corporate securities allows banks to manage their overall risk exposure dynamically.

During economic downturns, corporate credit demand often falls while default probabilities rise. Stiglitz and Weiss (1981) demonstrated that asymmetric information during crises can lead to credit rationing, where banks reduce lending to avoid adverse selection. In these scenarios, expanding the securities portfolio acts as a crucial capital buffer.

Borio (2003) and Goodhart (2008) also noted that holding liquid treasury bonds ensures that banks have high-quality collateral available to access emergency liquidity facilities from central banks, protecting the institution against systemic bank runs.

Bank Securities Portfolio Functions:

- Liquidity Cushion (Meeting LCR and Emergency Central Bank Funding)
- Credit Risk Counterweight (Offsetting Corporate Loan Book Volatility)
- Capital Adequacy Optimization (Lowering Risk-Weighted Assets under Basel III)
- Revenue Smoothing (Generating Predictable Coupon Income During Downturns)

The relationship between asset diversification and the formation of Non-Performing Loans (NPLs) has been extensively studied through econometric models. Berger and DeYoung (1997) formulated the "bad management" and "bad luck" hypotheses. Their empirical research confirmed that banks with low cost-efficiency and poor underwriting standards quickly accumulate toxic assets on their balance sheets.

Boudriga, Taktak, and Jellali (2009) conducted cross-country empirical analyses on NPL determinants, concluding that while external macroeconomic factors like GDP growth and inflation are important, internal risk-diversification strategies are the primary determinants of portfolio resilience. Banks that fail to diversify away from real estate or heavy industrial credit suffer much higher asset deterioration during economic shocks compared to institutions with strong investment operations in public debt instruments.

Additionally, Laeven and Levine (2009) investigated corporate governance and bank risk-taking behaviors. They found that highly concentrated ownership structures in emerging markets often lead to aggressive credit expansion and insider lending, which can compromise asset quality. Introducing market-traded securities into the asset mix forces a level of transparency and external valuation that helps counteract these internal governance failures.

The structural composition of bank assets is heavily influenced by international regulatory bodies. The Basel Committee on Banking Supervision (2010) introduced the Basel III framework to address systemic liquidity and capital shortfalls observed during the 2008 global financial crisis. Basel III mandates two primary liquidity metrics: the Liquidity Coverage Ratio (LCR), which requires banks to hold an amount of High-Quality Liquid Assets (HQLA) sufficient to survive a 30-day severe stress

scenario, and the Net Stable Funding Ratio (NSFR), designed to ensure sustainable structural funding profiles.

$$\text{LCR} = \frac{\text{Stock of High-Quality Liquid Assets (HQLA)}}{\text{Total Net Cash Outflows over 30 Days}} \geq 100\%$$

As Borio and Drehmann (2009) point out, these regulatory requirements fundamentally alter bank asset allocation behavior. Because sovereign securities carry a 0% risk weight under standardized Basel parameters, while commercial loans typically carry a 100% risk weight, banks are incentivized to expand their securities portfolios to improve their Capital Adequacy Ratios (CAR) without requiring massive capital injections.

In transition economies like Uzbekistan, scholarly focus has increasingly turned to the unique challenges of financial deregulation and state divestment. Historically, the Uzbek banking system operated under a highly centralized model, where state-directed credit was funneled to strategic economic sectors through state-owned commercial banks.

Chartayev and Xolmamatov (2022) examined the modern profitability indicators of Uzbek commercial banks, noting that the historic reliance on thin-margin, state-backed corporate lending created long-term structural constraints on return on equity (ROE) and return on assets (ROA).

Concurrently, Kholmamatov, Khannaev, and Ruzimoratov (2021) deployed institutional concentration indicators to evaluate competition across the domestic banking landscape. They established that high asset concentration among a few state-influenced institutions suppressed the growth of independent treasury and investment desks.

As a result, the domestic capital and debt markets remained underdeveloped, leaving commercial banks with few local securities options to diversify their balance sheets. The ongoing privatization of key institutions, such as Ipoteka-Bank and O‘zsanoatqurilishbank, marks a critical shift toward market-driven asset management and expanded institutional investment activity.

This study utilizes a combination of quantitative financial analysis, econometric modeling, and comparative institutional policy review to evaluate the quality of bank assets and the role of investment activities in Uzbekistan.

The empirical data for this research is gathered from the official statistical publications of the Central Bank of the Republic of Uzbekistan ($CBARU$), consolidated financial statements prepared under International Financial Reporting Standards (IFRS) by domestic commercial banks, and macroeconomic indices published by the Ministry of Economy and Finance. The review spans the 2022–2024 fiscal periods, with analytical extensions mapping institutional policy changes up into 2026.

The quantitative dataset tracks several key indicators:

- **The Structural Configuration of the System-Wide Loan Portfolio:** Segregated into "Standard," "Substandard," and "Problematic" (NPL) groupings.
- **The Asset Exposure Level of Large Borrowers:** Measuring the concentration of credit extended to the top 50 corporate clients, segmented by State-Owned Enterprises (SOEs) versus private sector entities.

- **Foreign Currency Risk Metrics:** The proportion of large-scale credit lines denominated in foreign currency (USD, EUR) relative to total corporate credit.
- **Portfolio Diversification Ratios:** Analyzing the ratio of securities investment to total assets across transformed and state-retained institutions.

To assess asset vulnerability and the impact of risk-mitigation measures, we apply the standard Capital Adequacy Ratio (CAR) formulation required under Basel III guidelines:

$$\text{CAR} = \frac{\text{Tier 1 Capital} + \text{Tier 2 Capital}}{\sum_{i=1}^{n}(A_i \times W_i)} \geq 13\%$$

Where A_i represents the book value of asset class i, and W_i represents its regulatory risk weight. In this analysis, we evaluate the impact of adjusting the risk weight for bank investments in non-financial entities upward to 200%, alongside the transition toward assigning a 0% risk weight to local sovereign securities.

The Loan-to-Value (LTV) ratio used to monitor consumer credit risk in the retail segment is modeled as:

$$\text{LTV} = \frac{\text{Principal Loan Amount}}{\text{Appraised Value of Collateral Asset}} \times 100$$

The qualitative component of this paper evaluates the macroprudential tools used by the Central Bank of Uzbekistan against established international frameworks. We contrast local asset management practices with risk-based loan pricing strategies from Western Europe, forward-looking stress-testing paradigms used in Australia, and blockchain-integrated transparency ledger models developed in Switzerland.

Data from macroprudential reviews shows that targeted regulatory adjustments have helped stabilize key banking metrics. By implementing regular stress-testing models developed with the assistance of World Bank and IMF experts, commercial banks have improved their loan-loss provisioning and accelerated the write-off of non-performing, non-banking assets.

By the end of the primary review period, the aggregate share of non-performing loans (NPLs) across the banking sector stabilized at **3.5%**, down slightly from **3.6%** in the previous fiscal cycle.

Table 1: Structural Composition of the System-Wide Loan Portfolio

Asset Classification Tier	Sub-Component Category	Share of Gross Portfolio (%)	Regulatory Action Required
Performing Assets	Standard Loans	80.0%	Baseline monitoring; standard reserve allocation
Underperforming Assets	Substandard Loans	16.0%	Enhanced supervision; structural early intervention
Impaired Assets (NPL)	Unsatisfactory Loans	1.5%	Active collection protocols; provisioning adjustments
	Doubtful Loans	1.1%	Debt restructuring or collateral evaluation
	Hopeless Loans	0.9%	Mandatory provisioning coverage; write-off tracking

To insulate the system from these impaired allocations, banks created an additional **2.4 trillion UZS** in loss reserves for non-standard assets. This expanded capital allocation raised the system-wide **NPL reserve coverage level from 80% to 82%**.

A granular review of credit impairment shows a strong concentration within specific economic segments. Corporate entities and legal business operations hold **85% (14.1 trillion UZS)** of all non-performing loans, while individual households account for the remaining **15% (2.5 trillion UZS)**.

An analysis of the retail NPL segment ($2.5 trillion UZS) reveals distinct structural risk concentrations across consumer credit lines:

Household NPL Breakdown (Total: 2.5 Trillion UZS)

- ├── Entrepreneurial Development Loans : 40% (1.0 Trillion UZS)
- ├── Mortgage Portfolios : 28% (709 Billion UZS)
- ├── Micro-Credit Facilities : 18% (470 Billion UZS)
- ├── Auto-Loan Allocations : 11% (271 Billion UZS)
- └── General Consumer Credit Lines : 3% (89 Billion UZS)

To curb rapid risk accumulation in the retail sector, macroprudential measures were introduced to tighten risk-weight factors for auto loans based on underlying collateral values. This intervention successfully moderated credit expansion: average monthly auto loan volume declined from **3.4 trillion UZS** during the first eight months of the year to **2.4 trillion UZS** over the final four months.

The primary structural risk within the asset framework remains the high concentration of credit among a small number of large borrowers.

Structural Concentration Metric: Loans extended to the top 50 large borrowers accounted for **24% of the entire credit portfolio** of the national banking sector, reaching **112 trillion UZS**.

The institutional and currency profiles of these 50 dominant credit exposures reveal significant dependencies:

- **State-Owned Enterprise (SOE) Share: 70% (77 trillion UZS)** of large-scale credit is concentrated within state-owned industrial conglomerates.
- **Private Corporate Share: 30% (35 trillion UZS)** is held by private sector firms.
- **Foreign Currency (FX) Structural Exposure: 77% (86 trillion UZS)** of these large-scale loans were issued in foreign currencies.

This heavy concentration of foreign currency debt exposes the banking system to currency-induced credit risk. Because many large corporate borrowers generate their revenues in local UZS, exchange rate fluctuations can increase their debt-servicing costs, elevating default risks across these critical bank assets.

To improve institutional resilience, the Central Bank implemented several key updates to align regulatory capital structures with Basel III guidelines:

- **Equity Investment Penalty:** The risk weight for bank investments in the equity capital of non-financial commercial entities was increased to **200%** to discourage excessive speculative asset holding.
- **Capital Rebalancing:** Tier I and Tier II regulatory capital shares were adjusted to an equal **50/50 ratio** to ensure stronger core loss-absorption capacity.
- **Subordinated Debt Restrictions:** Subordinated borrowing eligibility was capped at a maximum of **100% of Tier I capital**.
- **Minimum Authorized Capital Elevation:** Legislative changes required a phased increase in minimum authorized bank capital to **500 billion UZS**.

Concurrently, state dominance over banking sector assets declined. Following the privatization of a 75% stake in *Ipoteka-Bank* to Hungary's *OTP Bank*, the state's share of total banking sector assets decreased from **78% to 68%**, and its share of total banking capital fell from **78% to 65%**.

The empirical results demonstrate that while macroprudential policies have helped maintain a stable headline NPL ratio of 3.5%, the internal structure of bank balance sheets in Uzbekistan remains vulnerable. The fact that 24% of total banking credit is concentrated within just 50 borrowers represents a high level of institutional concentration risk. Because 70% of this concentrated credit is held by large State-Owned Enterprises, the performance of the commercial banking sector is closely linked to the financial stability and structural health of state-backed industrial monopolies.

This concentration risk is amplified by foreign currency exposure, with 77% of these large loans denominated in foreign currencies. This leaves the banking sector exposed to currency-induced credit risk, where unexpected domestic currency depreciation can rapidly increase debt-service burdens and cause a wave of loan defaults among corporate borrowers who operate primarily in local currency.

To mitigate these interconnected credit and currency risks, commercial banks must diversify away from traditional corporate loan books and expand their investment operations, particularly through securities portfolios.

A key pathway to improving bank asset quality in Uzbekistan involves expanding the scale and scope of bank investment activities. Currently, the securities portfolios of most domestic banks remain small, limiting their ability to act as a liquid cushion against credit shocks.

By increasing allocations toward sovereign bonds, treasury bills, and high-grade corporate debt instruments, commercial banks can secure several operational advantages:

1. **Risk-Weight Optimization:** Under Basel III rules, sovereign debt securities carry a 0% risk weight, allowing banks to improve their Capital Adequacy Ratios (CAR) without requiring large capital injections.
2. **Liquidity Buffer Strengthening:** An expanded portfolio of eligible securities increases a bank's stock of High-Quality Liquid Assets (HQLA), making it easier to meet strict Liquidity Coverage Ratio (LCR) targets.
3. **Revenue Stream Diversification:** Income from securities coupons provides a steady, predictable cash flow that helps stabilize bank earnings when credit markets slow down or loan default rates rise.

To enhance asset quality and build robust investment infrastructure, Uzbekistan's banking sector can adopt several proven global practices:

- **Risk-Based Loan Pricing (Germany & Canada):** Domestic institutions should replace flat-rate corporate interest structures with dynamic, risk-based pricing. This ensures that interest rates are accurately aligned with a borrower's specific default probability and collateral value, reducing overall credit risk.
- **Forward-Looking Macro Stress Testing (Australia):** Rather than relying entirely on historical financial metrics, banks should implement proactive scenario modeling. Simulating how prospective shifts in inflation, exchange rates, or sectoral output might impact asset performance allows banks to adjust their credit and investment mixes before risks materialize.
- **Advanced Quantitative Scoring and AI Analytics (Switzerland):** Incorporating machine learning algorithms and big data analytics into underwriting frameworks allows for a more accurate assessment of a borrower's creditworthiness, helping prevent the formation of non-performing loans in retail and commercial portfolios.

Improving asset quality and expanding investment activity are essential prerequisites for securing the long-term stability of the commercial banking system in the Republic of Uzbekistan. The empirical evidence indicates that while macroprudential interventions and privatization milestones—such as reducing the state's asset share to 68%—have strengthened the sector, structural vulnerabilities persist. High large-borrower concentration, extensive foreign currency exposure, and an underutilized corporate securities market continue to pose challenges.

Addressing these imbalances requires a structural shift, moving away from high-volume, concentrated corporate credit toward a diversified asset model that prioritizes liquid, high-grade securities portfolios and institutional investment desks.

To strengthen asset portfolios and accelerate investment activities across Uzbekistan's banking sector, the following actions are recommended:

1. Expand Institutional Allocations to Sovereign and Municipal Securities

Commercial banks should systematically increase the share of liquid government bonds and treasury bills within their asset structures. This expansion will diversify revenue streams, improve Basel III liquidity ratios, and lower overall risk-weighted asset profiles.

2. Establish Strict Sectoral and Single-Borrower Exposure Caps

The Central Bank should enforce tighter prudential limits on credit concentration, encouraging banks to reallocate excess capital away from large conglomerates and toward small and medium enterprises (SMEs), retail portfolios, and liquid capital market instruments.

3. Implement Risk-Based Pricing Frameworks

Domestic commercial banks should phase out standard interest rate lending and adopt advanced risk-based pricing models. Aligning loan interest rates with specific credit risk profiles will protect banks' net interest margins and incentivize higher underwriting standards.

4. Mitigate Foreign Currency Exposure Through Structured De-Dollarization

Banks should limit foreign currency loan allocations to corporate borrowers that lack consistent foreign currency revenue streams. For necessary foreign currency financing, banks should mandate the use of currency hedging options to protect debt-servicing capacity from exchange rate shocks.

5. Integrate AI-Powered Credit Scoring and Predictive Monitoring

Financial institutions should invest heavily in digital risk infrastructure, deploying machine learning algorithms and big data analytics to automate credit underwriting. This shift from manual, backward-looking credit checks to real-time predictive monitoring will help identify early default indicators and minimize new NPL formations.

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