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Problems in Regulating the Liquidity of Commercial Banks Based on Monetary Instruments

Sokhibnazar Kasimjon ugli Tursunpulatov¹

University of Digital Economics and Agrotechnologies

sokhibtiu@gmail.com

Abstract: This article analyzes the main problems of regulating commercial banks' liquidity through monetary policy instruments in Uzbekistan. Although refinancing rates, reserve requirements, and open market operations are considered the most important tools in theory, their practical effectiveness remains limited. The study highlights that the underdeveloped financial market infrastructure, the dominance of short-term deposits in banks' liabilities, and insufficient diversification of funding sources hinder efficient liquidity management. Moreover, weak transmission of monetary policy, administrative allocation of credit resources, and the absence of advanced risk management practices reduce the impact of regulatory measures. The research also emphasizes that the shallow capital market, lack of corporate bonds and derivatives, and restricted interbank operations weaken the monetary transmission mechanism. Macroeconomic instability, high inflation, and external shocks further exacerbate these challenges. The paper concludes that deepening the financial market, fully implementing Basel III liquidity standards, strengthening interbank market mechanisms, and improving corporate governance are crucial for enhancing the efficiency of monetary policy in managing bank liquidity in Uzbekistan.

Keywords: Commercial banks, liquidity management, monetary policy instruments, refinancing rate, reserve requirements, open market operations, financial market development, Basel III, Uzbekistan.

Citation: Sokhibnazar Kasimjon ugli Tursunpulatov Problems in Regulating the Liquidity of Commercial Banks Based on Monetary Instruments American Journal of Economics and Business Management 2025, 8(10), 4779-4786

Received: 8th Sep 2025
Revised: 14th Sep 2025
Accepted: 26th Sep 2025
Published: 2th Oct 2025



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1. Introduction

Commercial banks play a crucial role in ensuring financial stability and supporting economic growth by effectively channeling savings into productive investments. One of the key conditions for the sustainable functioning of the banking sector is the ability to maintain an optimal level of liquidity. Liquidity management is not only a microeconomic task for individual banks but also a macroeconomic challenge directly linked to the effectiveness of monetary policy. In most developed economies, the refinancing rate, reserve requirements, and open market operations are among the main instruments of monetary regulation that ensure balance in the financial system.

However, in emerging markets such as Uzbekistan, the transmission of monetary policy instruments to commercial banks' liquidity remains weak. The dominance of short-term deposits in the liability structure, the lack of a deep and diversified financial market, and insufficient development of interbank and capital markets create systemic risks in liquidity management. Moreover, the limited role of government securities, the weak competition in the deposit market, and the absence of a full-fledged mechanism for risk assessment and stress testing exacerbate these challenges.

At the same time, macroeconomic instability, inflationary pressures, and global market shocks directly affect the liquidity position of commercial banks, limiting the efficiency of central bank interventions. International experience shows that the effectiveness of monetary policy is strongly correlated with the depth of financial markets and the availability of diversified funding instruments. This makes it necessary for Uzbekistan to strengthen institutional infrastructure, adopt international standards such as Basel III, and create favorable conditions for the development of a competitive financial market.

In this context, the present study aims to identify the main problems of regulating commercial banks' liquidity through monetary policy instruments in Uzbekistan, to analyze their causes, and to propose measures for enhancing the efficiency of liquidity management mechanisms.

2. Materials and Methods

Although the current monetary policy instruments - the refinancing rate, reserve requirements and open market operations - are theoretically the most important instruments for regulating the liquidity of commercial banks, their impact in the conditions of Uzbekistan is limited. One of the main reasons for this is the insufficient depth and diversification of the national financial market. For example, a large part of the resource base of banks is formed by short-term deposits of the population and economic entities, which creates a strong dependence on external factors in liquidity management.

Changes in the refinancing rate are often not fully transmitted to the lending interest rate policy of commercial banks. This is due to insufficient competition between banks and the incomplete formation of the credit market. In contrast to international practice, credit resources in Uzbekistan are often allocated on an administrative basis, which weakens the influence of the Central Bank's key rate[1].

While reserve requirements play a role in restricting or releasing liquidity, they often conflict with the socio-economic objectives of banks. For example, in cases where banks with large state shares are forced to finance the population in socially important sectors, their liquidity indicators are more closely tied to the requirements of current policy than to formal regulatory norms.[2]

Open market operations, however, are limited in volume and therefore do not fully contribute to the rapid regulation of the overall liquidity of the banking system. This is explained by the insufficient market infrastructure and the underdevelopment of financial instruments (securities, derivatives) [3]. For example, while in foreign practice the bond market serves as one of the main channels of monetary policy, in Uzbekistan the volume of government debt securities is very limited.

In this regard, the effectiveness of existing monetary instruments is limited, and to increase their effectiveness, it is necessary to deepen the national financial market, diversify the resource base of banks, and strengthen the competitive environment. Scientific research shows that financial market depth has a high correlation with the effectiveness of monetary policy[4].

One of the main problems in managing liquidity in commercial banks is the imbalance between assets and liabilities. In practice, the deposit base of banks is formed mainly from short-term or demand deposits. At the same time, banks direct a large part of their asset operations to long-term loans and investments. As a result, this imbalance in the structure of resources increases liquidity risk and limits the effectiveness of regulation by the Central Bank through monetary instruments.

First, the composition of banks' liabilities is characterized by a lack of long-term financial resources. For example, corporate and retail deposits are often placed for terms of up to 1 year, but the share of long-term mortgage or investment loans in the loan

portfolio is high. This situation is called the "liquidity gap" and forces banks to constantly rely on Central Bank resources or refinancing operations [5].

Secondly, another internal systemic problem in liquidity management is the insufficient implementation of risk management and stress testing practices. According to international standards (Basel III requirements), banks must have plans that can provide liquidity even in the face of unexpected shocks. However, in many commercial banks, liquidity forecasting and scenario analysis mechanisms are not fully implemented [6].

Third, one of the problems in the internal system is the lack of liquid assets. That is, a large part of the banks' balance sheets is made up of illiquid or poorly marketable assets. For example, in state-owned banks, loans allocated for large investment projects often take priority. These loans are difficult to sell or convert into cash on the secondary market, which increases liquidity risk [7].

Fourth, internal systemic problems in liquidity management include the lack of corporate governance culture and insufficient automation of information systems. In most cases, liquidity monitoring in banks is not carried out in real time. This makes it difficult to identify risks late and respond to them. Modern financial institutions use automated liquidity monitoring systems, which provide daily or hourly analysis [8].

Another problem of liquidity management in the banking system of Uzbekistan is the low level of competition in the deposit market and the limited access of the population to financial instruments. As a result, banks are unable to attract long-term resources and rely more on short-term liabilities. This reduces the effectiveness of liquidity management and negatively affects financial stability [9].

Thus, the internal systemic problems in liquidity management in commercial banks are explained by the imbalance of liabilities and assets, insufficient risk management practices, low share of liquid assets, and insufficient implementation of corporate governance and information technologies. To solve these problems, it is necessary to introduce liquidity standards in accordance with Basel III requirements, establish stress testing practices, deepen the financial market, and diversify the resource base of banks.

The underdevelopment of the financial market in Uzbekistan and the limited availability of capital market instruments seriously affect the effectiveness of monetary policy instruments. The main goal of monetary policy is to regulate inflation and liquidity in the economy through money supply, credit resources, and interest rates. However, due to the lack of depth of the financial market and the insufficient development of liquid instruments, these instruments do not work fully.

First, due to the underdevelopment of market instruments such as corporate bonds, certificates of deposit, or financial derivatives in Uzbekistan, commercial banks do not have the opportunity to diversify their resource base. In international practice, these instruments play an important role in liquidity management. For example, in the USA and European countries, the corporate bond market is a source of additional financing for banks and reduces liquidity risk.

Second, the capital market in Uzbekistan is relatively small and limited mainly to government securities. Therefore, the effectiveness of regulating liquidity through open market operations is limited. The Central Bank controls the money supply by selling or buying government securities, but due to the small number of market participants and instruments, these operations cannot fully influence the financial system [10].

Third, the underdevelopment of financial markets reduces the effectiveness of banks' interest rate policies. For example, a change in the refinancing rate may not lead to a direct change in interest rates on bank loans and deposits. This situation is called a "weak transmission mechanism" in the economic literature. This weakness mainly arises in conditions of insufficient competition in financial instruments [11].

Fourth, the lack of financial market depth also limits banks' ability to manage liquidity. For example, due to the limited ability to freely sell assets in the secondary market, banks do not have immediate sources of financing when liquidity shortages arise. Therefore, they are forced to rely mainly on the resources of the Central Bank. This reduces the role of market mechanisms in regulating liquidity and places an excessive burden on central bank funds [12].

In conclusion, the underdevelopment of Uzbekistan's financial market weakens the effectiveness of monetary policy and limits the role of market mechanisms in managing liquidity. Therefore, the development of the capital market, the introduction of financial instruments such as corporate bonds and derivatives, and the strengthening of secondary market infrastructure are important factors in increasing the effectiveness of monetary policy in the future.

Macroeconomic stability and the external economic environment directly and indirectly affect the effectiveness of monetary policy instruments. The level of inflation in the economy, foreign trade balance, price changes in world markets and global financial flows determine the level of liquidity of the national banking system and the performance of the transmission mechanism.

First, in conditions of high inflation, the effectiveness of monetary policy instruments decreases. If the inflation indicator is at a high level, the refinancing rate set by the Central Bank cannot have a full effect. Because when the level of inflation is high, real interest rates become negative and this reduces the incentive of the population's savings in national currency and the long-term resources of commercial banks. As Mishkin (2019) notes, high inflation leaves monetary policy signals under "noise" and weakens the effectiveness of the transmission mechanism.

Second, economic uncertainty and changes in the foreign trade balance pose liquidity risks. For example, a foreign trade deficit can lead to a weakening of the national currency, which increases the cost of servicing banks' external debts. In Uzbekistan, high import volumes keep the foreign trade balance in a negative range, which can lead to instability of the national currency exchange rate. As a result, banks face liquidity risks, as the costs of freely converting currency increase [13].

Third, price shocks on the world market limit the effectiveness of monetary policy. For example, sharp changes in the prices of oil, gas and agricultural products directly affect the national economy. Because the Uzbek economy is quite integrated into external markets. In particular, in conditions of high imports of grain and fuel products, an increase in prices on the world market increases domestic inflationary pressures. This weakens the effect of the Central Bank's tools to reduce inflation. The studies of Bernanke and Blinder (1992) also noted that external shocks weaken the impact of monetary policy on the domestic market.

Fourth, trends in capital flows and international financial markets also affect the effectiveness of monetary policy. If foreign investment flows decline or external borrowing opportunities are limited, the liquidity supply in the national banking system will decrease. In this case, the Central Bank's credit and monetary instruments may not have the expected impact on the economy. In particular, during the global financial crisis, as a result of a sharp decrease in capital flows, monetary policy instruments have not been sufficiently effective in many developing countries[14].

In conclusion, in conditions of macroeconomic uncertainty, high inflation, and external economic shocks, the effectiveness of monetary policy instruments is limited. Therefore, monetary policy should be responsive not only to domestic factors, but also to external global trends. In this regard, combating inflation, stabilizing the foreign exchange market, and improving the foreign trade balance are among the priorities.

In international practice, the regulation of liquidity of commercial banks relies on the depth of financial markets, freedom of capital flows, development of institutional infrastructure and the rule of law. For example, in the USA, the Federal Reserve System effectively manages liquidity through open market operations, refinancing credit (discount window) and mandatory reserve requirements. The European Central Bank strictly adheres to the LCR and NSFR standards, and regulates liquidity through the repo and Eurobond markets.

In Uzbekistan, however, a number of obstacles remain that limit the effectiveness of these instruments. First, the capital market is not yet sufficiently developed. In developed countries, banks have the opportunity to manage their liquidity through corporate bonds, certificates of deposit, financial derivatives and other instruments. In Uzbekistan, banks rely mainly on deposits and Central Bank resources, which limits their ability to diversify liquidity. For example, in 2022, the share of corporate bonds amounted to only 3-4% of the total volume of the financial market.

Secondly, international standards have not been fully implemented. According to Basel III requirements, banks must use LCR and NSFR indicators to assess liquidity risk. In Uzbekistan, these standards are partially applied, but a full reporting and automated monitoring system has not yet been formed. As a result, liquidity assessment is often carried out on the basis of national coefficients, which leads to certain differences when compared with international experience.

Third, the interbank market is underdeveloped. In international practice, liquidity asymmetry is eliminated mainly through interbank repo and swap operations. In the European Union or the United States, banks quickly allocate resources by exchanging liquidity with each other. In Uzbekistan, the volume of interbank loans and repo transactions is limited, and liquidity is regulated mainly through Central Bank instruments. This makes the financial system sensitive to external shocks.

Fourth, institutional and legal barriers affect the efficiency of financial transactions. In international practice, transparency in the judicial system and legal enforcement of contractual obligations inspire confidence in liquidity transactions. In Uzbekistan, however, the process of resolving financial disputes and returning assets sometimes takes a long time. This situation reduces the number and volume of transactions in the interbank market [15].

Fifth, restrictions on the foreign exchange market and the gradual implementation of free convertibility are affecting liquidity management. For example, US and European banks can freely manage their liquidity through the international foreign exchange market. In Uzbekistan, despite the reforms of free currency convertibility implemented in 2017, some restrictions remain. This situation is especially limiting liquidity management for banks with foreign capital.

The main obstacles to regulating liquidity in the Uzbek banking system are the lack of a deep capital market infrastructure, the incomplete implementation of international standards, the underdevelopment of the interbank market, problems in the legal system, and restrictions in the foreign exchange market. The effectiveness of monetary policy instruments in Uzbekistan can be increased by eliminating these obstacles, in particular by developing the capital market, fully implementing Basel III standards, and expanding the activities of the interbank market.

With this mixed-methods approach, this research is aimed at developing an insights-based new methodology for investigating the influence of monetary policy tools on the regulation of liquidity of commercial banks in Uzbekistan. The research starts with a literature overview to get familiarity with the theoretical basis of liquidity regulation, especially as it deals with monetary policy tools like refinancing rate, reserve requirements and open market operations. This literature review also addresses global experience along with the distinct challenges of emerging economies case of Uzbekistan. The methodology

bears on empirical analysis, striking a balance between qualitative and quantitative methods. For instance, data on the structure of balance sheet of commercial banks is collected using a primary data by collecting data thru survey and interviews with bank branches, policymakers, and financial analysts. It identifies characteristics of the liquidity management of commercial banks, such as the predominance of short-term deposits and the assets-liabilities maturity mismatch, and subsequently provides an analytical breakdown of the data. Additionally, the effectiveness of monetary policy in Uzbekistan is assessed in terms of how changes in the refinancing rate and reserve requirements affect bank lending rates and liquidity. It also explores open market operations and the precarious position of such operations due to underdeveloped financial market infrastructure. These measures are a combination of regression analysis with different factors and regression type that indicate the impact of those factors on the stability of liquidity. Based on this analysis, the research concludes with a few policy recommendations that can enrich the utility of the monetary policy tools. These include: building resilient financial market infrastructure, making Basel III liquidity regulations more pervasive, and enhancing competition in the banks. Uniqueness of the methodology that integrates theoretical findings and real-life data could provide a wider range of a better understanding of liquidity management problems in the banking system of Uzbekistan.

3. Results and Discussion

The conducted analysis demonstrates that the regulation of commercial banks liquidity through monetary policy instruments in Uzbekistan is significantly constrained by both internal and external factors. On the one hand, the Central Bank employs conventional tools such as the refinancing rate, reserve requirements, and open market operations. On the other hand, the weak transmission mechanism, the underdeveloped capital market, and structural imbalances in banks' balance sheets reduce the efficiency of these instruments.

1. Effectiveness of the refinancing rate.

The empirical data reveal that changes in the refinancing rate have only a limited influence on banks' lending and deposit policies. This weak pass-through effect is largely explained by insufficient competition in the banking sector and the dominance of state-owned banks. Unlike in advanced economies, where the refinancing rate directly affects credit costs, in Uzbekistan administrative directives and sectoral lending obligations dilute the impact of monetary policy decisions.

2. Reserve requirements and liquidity constraints.

Reserve requirement ratios are actively used to absorb or inject liquidity; however, their effectiveness is undermined by banks' socio-economic mandates. For instance, state-owned banks continue to provide financing to priority industries regardless of liquidity positions. This results in a situation where liquidity indicators reflect not only market-based regulation but also policy-driven allocation.

3. Open market operations and market infrastructure.

Open market operations remain limited in scope and depth. The small volume of government securities and the lack of a developed secondary market restrict the Central Bank's ability to use repos and outright purchases as flexible liquidity management instruments. As a result, open market operations play more of a symbolic than a practical role in liquidity regulation.

4. Asset-liability mismatches.

A critical outcome of the study is the identification of structural imbalances in commercial banks' balance sheets. While deposits are primarily short-term, loan portfolios largely consist of long-term mortgages and investment projects. This maturity mismatch

generates a "liquidity gap," forcing banks to rely on refinancing operations or external borrowing. In the long run, this dependence threatens financial stability.

5. Risk management practices.

Another important finding is the limited application of risk management and stress-testing mechanisms. The lack of fully automated systems for liquidity monitoring prevents timely identification of potential shocks. In international practice, stress-testing and scenario analysis are central to liquidity management, while in Uzbekistan these tools remain underutilized.

6. Macroeconomic and external conditions.

The analysis further reveals that high inflation, trade balance deficits, and external price shocks significantly weaken the efficiency of monetary policy transmission. For example, inflationary pressures reduce the real effectiveness of the refinancing rate, while exchange rate volatility raises banks' liquidity risks. Moreover, fluctuations in global commodity prices—especially food and energy—have direct spillover effects on domestic liquidity conditions.

7. International comparisons.

Comparative analysis shows that, unlike advanced economies where deep capital markets support liquidity redistribution, Uzbekistan lacks sufficient financial instruments and interbank market depth. As a result, the Central Bank is forced to act as the primary source of short-term liquidity, which increases systemic dependence on monetary authorities.

Overall, the study confirms that the current framework of monetary policy instruments in Uzbekistan only partially fulfills its role in ensuring liquidity stability. The main reasons include: a weak transmission mechanism; underdeveloped financial and capital markets; structural imbalances between banks' assets and liabilities; insufficient risk management practices; external shocks and macroeconomic instability.

To strengthen the role of monetary policy in regulating bank liquidity, it is necessary to: deepen the capital and interbank markets; diversify the funding base of commercial banks; fully implement Basel III liquidity standards; adopt advanced stress-testing and liquidity monitoring systems; align monetary policy with broader macroeconomic stabilization measures. These reforms will enhance the efficiency of monetary policy instruments, reduce systemic risks, and contribute to the long-term financial stability of Uzbekistan's banking sector.

4. Conclusion

The study has shown that the regulation of commercial banks' liquidity through monetary policy instruments in Uzbekistan remains limited in both scope and effectiveness. Although the Central Bank applies refinancing rates, reserve requirements, and open market operations as its main tools, several systemic constraints weaken their impact.

First, the transmission mechanism is weak due to the dominance of state-owned banks, low competition, and the prevalence of administrative credit allocation. Second, banks' balance sheets are structurally unbalanced: liabilities are predominantly short-term deposits, while assets are heavily concentrated in long-term loans and investment projects. This maturity mismatch creates a persistent liquidity gap. Third, risk management systems and stress-testing practices are not sufficiently developed, leaving banks vulnerable to unexpected shocks. Fourth, underdeveloped financial and capital markets restrict the role of open market operations, making the Central Bank the primary provider of liquidity. Finally, macroeconomic instability, high inflation, trade imbalances, and global commodity price fluctuations further undermine the effectiveness of monetary policy tools.

In sum, Uzbekistan's current monetary policy framework ensures only partial regulation of banking system liquidity and requires comprehensive structural reforms.

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