MONETARY POLICY TRANSMISSION AND REAL GDP GROWTH IN UZBEKISTAN: EVIDENCE FROM THE REFORM ERA (2015–2024)

Mirzaraximov Avazbek Oybek ugli
Tashkent State University of Economics
Faculty of Economics
avazbekmirzaraximov779@gmail.com
ORCID: 0009-0005-8159-6874

O'ZBEKISTONDA PUL-KREDIT SIYOSATI MEXANIZMI VA REAL YAIM O'SISHI ASOSIDA EMPIRIK TAHLIL (2015–2024)

Mirzaraximov Avazbek Oybek o'g'li
Toshkent davlat iqtisodiyot universiteti
Iqtisodiyot fakulteti
avazbekmirzaraximov779@gmail.com
ORCID: 0009-0005-8159-6874

Abstract: Dynamic impact of monetary policy on economic growth in Uzbekistan during the transformation reforms was investigated in this paper for the period grom 2015 to 2024. By using a quantitative descriptive method and time-series data which is collected from Central Bank of Uzbekistan, this study analyzes how money supply, interest rate and inflation influence real GDP growth. The results reveal that during the economic shifts such as currency liberalization and global pandemic, expansionary monetary policy has an essential role as it helps stabilize the economy by providing necessary money supply. However, the findings indicate the significant trade-off where continued monetary expansion may contribute to persistent inflationary pressures and increased volatility in real interest rates. Moreover, empirical analysis shows how Uzbekistan had resilient growth which was higher than global averages in the international economic downturns. According to the conclusion of the study if economy continues to move toward market-based system, efficiency of monetary policy will depend on inflation-targeting policies which should be successfully implemented.

Key words: Monetary policy, economic growth, real interest rate, broad money (M2), inflation targeting, monetary transmission

Annotatsiya: Ushbu maqolada transformatsiya islohotlari davrida O'zbekiston iqtisodiy o'sishiga pul-kredit siyosatining dinamik ta'siri 2015-yildan 2024-yilgacha bo'lgan davr misolida tadqiq etilgan. O'zbekiston Respublikasi Markaziy bankidan olingan vaqtli qatorlar ma'lumotlari va miqdoriy-tavsifiy metoddan foydalangan holda, tadqiqotda pul massasi, foiz stavkalari va inflyatsiyaning real YaIM o'sishiga ta'siri tahlil qilinadi. Natijalar shuni ko'rsatadiki, valyuta liberallashuvi va global pandemiya kabi iqtisodiy o'zgarishlar davrida ekspansionistik (kengaytiruvchi) pul-kredit siyosati iqtisodiyotni zarur pul massasi bilan ta'minlash orqali barqarorlashtirishda muhim rol o'ynagan. Biroq, tadqiqot natijalari jiddiy o'zaro bog'liqlikni (trade-off) ko'rsatmoqda: pul massasining muttasil kengayishi barqaror inflyatsion bosimga va real foiz stavkalarining o'zgaruvchanligi

(volatilligi) oshishiga olib kelishi mumkin. Bundan tashqari, empirik tahlillar O'zbekiston iqtisodiyoti xalqaro inqirozlar davrida global o'rtacha ko'rsatkichlardan yuqori bo'lgan barqaror o'sish sur'atlarini namoyon etganini tasdiqlaydi. Tadqiqot xulosasiga ko'ra, iqtisodiyotning bozor tamoyillariga o'tishi davom etar ekan, pul-kredit siyosatining samaradorligi inflyatsion targeting strategiyasining muvaffaqiyatli amalga oshirilishiga bog'liq bo'ladi.

Kalit so'zlar: Pul-kredit siyosati, iqtisodiy o'sish, real foiz stavkasi, keng ma'nodagi pul massasi (M2), inflyatsion targeting, monetar transmissiya.

Introduction. Over the last decade, Uzbekistan has experienced a significant economic transformation which is moving away from a centrally planned system toward a more open and market-oriented economy. A key driver of this economic shift has been using monetary policy as a tool to maintain macroeconomic stability as well as promoting long-term economic growth. The period from 2015 to 2024 is particularly important, since it includes huge reforms such as the 2017 currency liberalization and the transition to a more independent and modern banking system.

It is noticeable statistical feature that, Uzbekistan stayed resilient during global instability. Although the World Bank reported that global GDP declined by -3.1% in 2020, Uzbekistan had still growth of 1.56%. this indicates that the country's monetary and fiscal policies were relatively strong. Over the full decade, Uzbekistan Maintained an average real GDP growth with the rate of 5.83%, which highlights the capacity of economy to withstand external shocks while having sustainable growth

The main aim of this analysis is to examine the link between the Central Bank's policy tools which are particularly money supply expansion and real interest rate management and consistent economic growth. Although classical economic theory implies a straightforward relationship between liquidity and output, transition economies often face more complex dynamics that include time lags and structural trade-offs. This research investigates how an average annual money supply growth of 23.64% combined with fluctuating interest rates, contributed to economic stability. Through empirical analysis, the study offers insights into how monetary policy can support both economic transition and resilience in a modern global context

Literature review. According to the research conducted by Rahman (2019), the long-term relationship between monetary tools and economic growth in Bangladesh is empirically examined. By using co-integration and Error Correction Models (ECM) on the data which was collected over several years, the researcher finds that broad money supply *(M2)* and interest rates have significant and stable impact on GDP growth. The results suggest that while economy is developing expansionary monetary policy can be effective to stimulate the growth, however, if inflation is not controlled, these gains may diminish over time

The paper written by Abasimi et al. (2018) investigates how monetary policy influences economic output by employing Vector Error Correlation Model (VECM). Researchers highlight price stability and inflation control as essential objectives to achieve sustainable economic development. Based on the conclusion of research it is revealed that stable monetary environment plays a crucial role in attracting foreign direct investment (FDI), since high volatility in policy rates often discourages long-term investment commitment.

From the perspective of Havi and Enu (2014), Ghanian economy is analyzed

through Ordinary Least Squares (OLS) regression. Evidences suggest that in West African markets money supply channel operates considerably more effective than interest rate channel. Authors argue that if there is a high velocity of money in informal sectors and limited financial inclusion, direct management of monetary aggregates should be used by Central bank to increase productivity in the real sector.

Research done by Agu and Evoh (2007) which is published by the Central bank of Nigeria, informs about the impact of structural problems in the banking sector on the outcomes of monetary policy via descriptive and secondary data analysis. Researchers implement transmission mechanism called "Clogged" where non-performing loans and institutional corruption frequently hinder the credit channels. It is argued that reductions in central bank rates are trapped within banking system. As a result, they often fail to reach the small and medium enterprises (SMEs) which are key contributors to GDP growth.

The study, which is organized by Twinoburyo and Odhiambo (2018), analyzes how monetary policy is associated with economic growth in sub-Saharan Africa. As a result of a systematic thematic synthesis, researchers made categorization of studies by using Fiscal vs. Monetary variables. Findings show that although, monetary policy can be effective in the short run, for long term growth it should be synchronized with fiscal policy. Otherwise, without proper fiscal control, monetary expansion results can result in debt distress instead of fostering sustainable economic growth.

Looking to the paper of Wardhono et el. (2020) dual banking system in Indonesia is evaluated by applying Vector Autoregression (VAR) analysis based on the data that is collected monthly. Authors conduct the comparison between Conventional Interest Rates with Islamic Profit-Sharing Rates and show them as main mechanisms for maintaining stability. Through Impulse response Functions (IRF) and Variance Decomposition, study reveals how economy can react to external financial shocks. Results show that when there is interest rate fluctuations globally, profit-sharing system can be more resilient because of directly aligning financial returns with real sector performance.

In the investigation led by Law et al. (2016) by using dynamic panel data analysis across 85 countries researchers focus on "knowledge economy". R&D expenditure, patent applications and high-tech exports are shown as proxy variables for advanced economic growth. In the research Generalized Method of Moments (GMM) was applied by authors who indicate that low-interest-rate environments are crucial for innovation-led investment. According to the findings effectiveness of monetary easing depends on the human capital, since low-cost credit is insufficient to foster economic growth without capacity to absorb technology

The study conducted by Orphanides (2006) the analyzes policy rules which specifically investigate the Taylor Rule and the Zero Lower Bound (ZLB). After using historical Federal Reserve data and output gap estimations, author finds how interest rate adjustments are limited. The paper recommends that if nominal rates are near to reach zero percent, Central Bank should use "Expectation management" and forward guidance. This paper indicates the influence of future policy on current growth rather than the adjustments of current rate.

Looking at the research of Loayza and Schmidtt-Hebbel (2002), the Exchange Rate Pass-Through (ERPT) mechanism is investigated by employing Structural VAR models. Researchers analyzed Import Prices,

Nominal Exchange Rates and Foreign Reserves within open economics in their study which demonstrate balance between inflation control and export performance. Evidences prove that increasing interest rates in the purpose of decreasing inflation can cause to trigger currency appreciation which as a result slow down GDP growth gradually in the medium term.

In the paper written by Fidrmuc (2009) transition economies in Central and Eastern Europe were examined by using cross-sectional and panel data. Main focus of study was on Central Bank Independence (CBI) indices and inflation targeting frameworks. Correlation of these variables with GDP growth stability illustrates how legal independence contributes to economic performance. The findings suggest that CBI is essential mechanism for sustaining long term growth, by mitigating political business cycles that often result in unsustainable monetary expansion.

Methodology. This research adopts quantitative descriptive analysis method which evaluates the macroeconomic trajectory of Uzbekistan in the years from 2015 to 2024. This method is driven by 10 years of observation window with the primary goal of analyzing economic variables systematically in the period of structural changes in Uzbekistan. All the data in this study was collected through official databases such national Statistics Committee of the republic of Uzbekistan and Central Bank of Uzbekistan (CBU). Four main macroeconomic indicators were selected to show the state of national economy. Firstly, real GDP growth is taken primarily to reveal how economy is growing. Secondly, CPI inflation measures price stability and changes in consumer purchasing power. Real interest rate which is adjusted for inflation is employed as it indicates the true cost of capital and domestic savings. Finally, broad money growth acts as a essential monetary aggregate to examine connection between expansions in money supply and inflationary pressure.

The collected data was processed and analyzed in two stages which are in Stata 17 for accuracy and Microsoft Excel for visualization. In the first step, in order to identify central tendency and dispersion measures, each variable is subjected to univariate descriptive analysis. Over a decade of average economic performance is determined by calculating the mean, while economic risk and volatility is shown by standard deviation. Minimum and maximum values is used to highlight main points. In the next step of the methodology line chart is used to show synchronized trend analysis. This approach helps to visualize each variable whether it increased or decreased in ten years.

Analysis and interpretation. The main objective of this analysis is to indicate how strongly the expansionary monetary policy of the Central Bank of Uzbekistan (CBU) has affected the country's real GDP growth. According to the liquidity transmission mechanism, an increase in broad money supply acts as driving force for economic activity in a developing economy which is experiencing structural transformation.

Table 1

Descriptive statistical summry of key monetary and macroeconomic indicators of Uzbekistan.

Variable	Obs	Mean	Std. Dev.	Min	Max
Gdp_growth	10	5.83	1.79	1.56	8.03
Real interest_rate	10	3.36	7.27	-13.69	10.61
Broad money_growth	10	23.64	9.16	12.16	40.21
Inflation	10	11.76	2.93	8.13	17.52

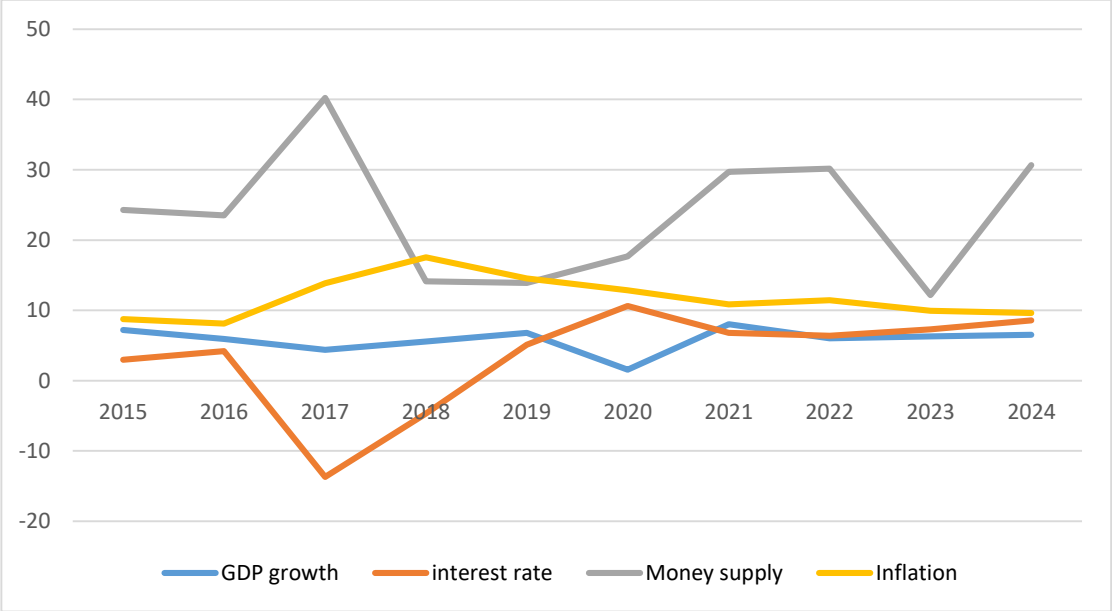
As it is shown in the table 1, the average growth of broad money (M2) is 23.64%, which is considerably higher than the average real GDP growth rate of 5.83%. This gap suggests that although monetary policy was highly expansionary, its influence on real output was not directly proportional. In the years 2017 and 2018 there was a notable change, money supply growth reached its peak with 40% increase. This high rise happened because of currency liberalization reforms. By injecting substantial liquidity into financial system, Central Bank helped avoid a potential liquidity shortage which might have resulted from the sharp depreciation of the Uzbek Soum.

At the same time, relatively high standard deviation of 9.16 in money growth indicates significant fluctuations in policy. This may show two roles of monetary policy during transition period which are not only stimulating the economy but also supporting state owned enterprises (SOEs) with soft budget constraints. While this approach helped government sustain GDP growth more than 5% almost over a decade, it was also crucial against inflationary pressures. This suggests that while the liquidity channel in Uzbekistan is effective in maintaining economic activity and preventing downturns, it faces challenges in ensuring stable prices.

Another key indicator of analysis is interest rate channel, which has a direct impact on borrowing costs for businesses and households

Figure 1

Dynamic interaction between GDP growth, inflation and Monetary aggregates



Real interest rate which is illustrated in Figure 1, reflects interaction between subsidized lending and market stabilization. The data shows high volatility with standard deviation of 7.27. a negative real interest rate which is -13.69% in 2018, implies that inflation exceeds the nominal interest rate, that reduces the real cost of borrowing and discourages savings.

From the perspective of economic growth, these negative rates acted as a stimulus for real sector. Between 2017 and 2019 period, they supported sectors such as industry and agriculture despite the disruptions that came from liberalization reforms. However, the effectiveness of this approach weakened. Because of the more stable and positive interest rates, GDP growth did not decline sharply. Instead of that it became more balanced and less dependent on excessive credit expansion. this indicates a gradual shift toward a more mature interest rate channel, where credit is allocated through market conditions rather than artificially low rates. This kind of transition is crucial for achieving sustainable economic growth.

Finally, to better understand the overall effect of monetary policy, credit channel should be considered, specifically how the banking system transmit central bank policies to the real sector. The decline in GDP growth to 1.56% in 2020 clarify how Central Bank responded to crises. In this period, the central bank maintained strong money supply growth and introduced measures such as loan repayment delays to support businesses against the economic shock

Comparing the high-growth years of the mid-2010s with the reform-intensive years of the early 2020s, we observe that the relationship between monetary policy and growth has evolved significantly. In the earlier period, growth was largely driven by rigid, state-controlled credit expansion. In the current era, the CBU's transition toward Inflation Targeting has begun to decouple GDP growth from simple monetary printing. The stabilizing trends in the final two years of the dataset suggest that the "Monetary

Policy Transmission Mechanism" is becoming more predictable and less reliant on emergency shocks.

The analysis proves that while expansionary monetary policy was a successful tool for avoiding the problems that might have arisen from economic transition during 2017 reforms and 2020 pandemic, its future role in stimulating growth will depend on its ability to maintain stable and positive real interest rate. This is important for Uzbekistan economy's transition from credit-fueled growth model to a productivity-driven model. By stabilizing inflation rate and ensuring predictable cost of capital, The Central bank provide the macroeconomic foundation which is necessary for long term investment that lead to economic expansion.

Conclusion. The empirical analysis of Uzbekistan's macroeconomic performance between 2015 and 2024 demonstrates that monetary policy played a central role in sustaining economic stability during a period of deep structural change. By examining the relationship between monetary aggregates, interest rate dynamics, and real output, the study shows that the Central Bank of Uzbekistan effectively managed both internal reforms and external shocks. The steady expansion of broad money, averaging 23.64% over the decade, acted as an essential liquidity cushion during key events such as the 2017 currency liberalization and the 2020 global pandemic. This supportive stance helped prevent a sharp contraction in the real sector, allowing the economy to maintain an average GDP growth rate of 5.83%.

At the same time, the findings highlight important structural trade-offs. Ongoing inflationary pressures and significant volatility in real interest rates—falling to as low as -13.69% in 2018—indicate that the interest rate transmission channel remains underdeveloped. Although negative real rates temporarily boosted state-driven industrial expansion, they also introduced distortions in market signals. More recent data from 2022 to 2024 suggests that maintaining positive real interest rates has not constrained growth; instead, it has supported a transition toward a more sustainable, productivity-based economic model.

Looking ahead, it is advisable for the Central Bank to further enhance the effectiveness of its transmission mechanism by gradually reducing directed lending and allowing interest rates to be shaped by market forces. This would improve capital allocation toward more efficient private sector activities. Additionally, the continued move toward a full inflation-targeting framework should be complemented by strong fiscal discipline to prevent excess liquidity. In summary, while expansionary monetary policy was crucial in managing early reform-related shocks, long-term economic success will depend on maintaining macroeconomic stability and ensuring a predictable cost of capital that encourages both domestic and foreign investment.

REFERENCES

1. Alajekwu, U. B. Effect of Monetary Policy on Economic Growth in Nigeria: An Empirical Investigation. Annals of Spiru Haret University. Economic Series. https://doi.org/10.26458/1815
2. Akalpler E, Duhok D (2018), "Does monetary policy affect economic growth: evidence from Malaysia". *Journal of Economic and Administrative Sciences*, Vol. 34 No. 1 pp. 2–20, doi: https://doi.org/10.1108/JEAS-03-2017-0013
3. Omotor, D. G. (2007). Monetary policy and economic growth: Theoretical and Conceptual Issues. *Economic and Financial Review*, *45*(4), 3.
4. Nga, N. T. V. (2021). Monetary policy, exchange rate, renewable energy and economic growth: An empirical analysis of Vietnam. *Accounting*, *7*(6), 1315-1324.
5. Rahman, M. N., Nower, N., Tushar, R. H., Abbas, S. M., & Musa, M. N. (2019). Impact of monetary policy on the economic growth of a developing country: an empirical study on Bangladesh economy. *Available at SSRN 3391280*.
6. Abdelkafi, I. (2018). The relationship between public debt, economic growth, and monetary policy: Empirical evidence from Tunisia. *Journal of the Knowledge Economy*, *9*(4), 1154-1167.
7. Abdelkafi, I. (2018). The relationship between public debt, economic growth, and monetary policy: Empirical evidence from Tunisia. *Journal of the Knowledge Economy*, *9*(4), 1154-1167.
8. Dickinson, D., & Jia, L. (2007). The real effects of monetary policy in China: An empirical analysis. *China Economic Review*, *18*(1), 87-111.
9. Moh'd Al-Tamimi, K. A., Jaradat, M. S., & Aityassine, F. (2023). The role of monetary policy in shaping jordan's economic growth: a regression analysis from 2008 to 2022. *International Journal of Professional Business Review: Int. J. Prof. Bus. Rev.*, *8*(7), 57.
10. Central Bank of the Republic of Uzbekistan. (2024). *Annual Report on Monetary Policy for 2023 and Targets for 2024-2026*. Tashkent: CBU Publishing.
11. Central Bank of the Republic of Uzbekistan. (2020). *Monetary Policy Measures during the COVID-19 Pandemic: Ensuring Financial Stability*. Tashkent: CBU Archive.
12. World Bank. (2024). *Europe and Central Asia Economic Update: Unleashing the Power of the Private Sector*. Washington D.C.: World Bank Publications.
13. State Committee of the Republic of Uzbekistan on Statistics. (2024). *Main Macroeconomic Indicators for 2015-2024: Statistical Yearbook*. Tashkent: Stat.uz.
14. International Monetary Fund (IMF). (2023). *Uzbekistan: Staff Report for the 2023 Article IV Consultation*. Washington D.C.: IMF Country Reports.
15. Usmonov, B. (2022). POSSIBILITIES OF INCREASING ECONOMIC POTENTIAL OF INDUSTRIAL ENTERPRISES OF UZBEKISTAN (ON THE EXAMPLE OF JSC «UZBEKLIGHTINDUSTRY»). *Архив научных исследований*, *4*(1).
16. Usmonov, Bunyod. "Analysis of Equity and Its Efficiency in Joint Stock Companies of Uzbekistan." *World Economics and Finance Bulletin*, vol. 20, 30 Mar. 2023, pp. 167-171.
17. Usmonov, B. (2025). KAPITAL AKTIVLARINI BAHOLASHDA MODILYANI-MILLER MODELINING AHAMIYATI. *Raqamli iqtisodiyot va axborot texnologiyalari*, *5*(1), 178-183.