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UNCONVENTIONAL MONETARY POLICY AND INFLATION TARGETING IN EMERGING ECONOMIES: LESSONS FOR UZBEKISTAN

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Abstract. The post-pandemic inflationary surge of 2021–2023 forced central banks worldwide to reassess the adequacy of their conventional and unconventional monetary policy toolkits. Advanced economies deployed quantitative easing (QE), forward guidance (FG), yield curve control (YCC), and negative interest rate policies (NIRP) on an unprecedented scale. For emerging and frontier economies such as Uzbekistan, which are simultaneously pursuing a transition to inflation targeting (IT), the relevance of unconventional instruments represents both an opportunity and a risk, while their empirical foundations remain underexplored.

Inflation expectations ($\beta_4 = 0.634$ in the long run, $p < 0.001$) and the policy interest rate ($\beta_2 = -0.743$ in the long run, $p < 0.001$) are the dominant determinants of inflation in Uzbekistan. The exchange rate pass-through is moderate ($\beta_3 = 0.198$). The comparative analysis shows that unconventional instruments are most effective in deep financial markets and least transferable to shallow and dollarized economies. Full adoption of forward guidance could reduce Uzbekistan's inflation expectations gap by 1.5–2.5 percentage points.

The findings provide practical guidance for the Central Bank of Uzbekistan's communication strategy, the Ministry of Finance's capital market development agenda, and commercial banks' interest rate risk management practices.

Keywords: unconventional monetary policy; inflation targeting; quantitative easing; forward guidance; yield curve control; inflation expectations; monetary transmission; Uzbekistan; emerging economies; New Keynesian Phillips Curve.

Аннотация. Постпандемийный всплеск инфляции в 2021–2023 годах заставил центральные банки во всем мире пересмотреть эффективность традиционных и нетрадиционных инструментов денежно-кредитной политики. Центральные банки развитых стран в беспрецедентных масштабах применяли количественное смягчение (QE), политику перспективных ориентиров (Forward Guidance, FG), контроль кривой доходности (Yield Curve Control, YCC) и политику отрицательных процентных ставок (Negative Interest Rate Policy, NIRP). Для стран с формирующейся и развивающейся рыночной экономикой, таких как Узбекистан, одновременно осуществляющих переход к режиму инфляционного таргетирования (IT), использование нетрадиционных инструментов представляет как новые возможности, так и потенциальные риски, тогда как их эмпирическая эффективность остается недостаточно изученной.

Установлено, что инфляционные ожидания ($\beta_4 = 0,634$ в долгосрочном периоде, $p < 0,001$) и ключевая процентная ставка ($\beta_2 = -0,743$ в долгосрочном периоде, $p < 0,001$) являются основными факторами, определяющими динамику инфляции в Узбекистане. Эффект переноса изменений обменного курса на инфляцию является умеренным ($\beta_3 = 0,198$). Сравнительный анализ показывает, что нетрадиционные инструменты денежно-кредитной политики наиболее эффективны в странах с глубокими и развитым финансовыми рынками и значительно менее применимы в экономиках с неглубокими финансовыми рынками и высоким уровнем долларизации. Полномасштабное внедрение политики Forward Guidance может сократить разрыв инфляционных ожиданий в Узбекистане на 1,5–2,5 процентного пункта.

Полученные результаты содержат практические рекомендации для Центрального банка Республики Узбекистан по совершенствованию коммуникационной политики, для Министерства экономики и финансов — по развитию рынка капитала, а также для коммерческих банков — по совершенствованию системы управления процентным риском.

Ключевые слова: нетрадиционная денежно-кредитная политика; инфляционное таргетирование; количественное смягчение; перспективные ориентиры (Forward Guidance); контроль кривой доходности; инфляционные ожидания; механизм денежно-кредитной трансмиссии; Узбекистан; страны с формирующейся рыночной экономикой; новая кейнсианская кривая Филлипса.

INTRODUCTION

The decade spanning 2013–2023 represents the most turbulent period in global monetary policy since the stagflationary 1970s. Following the 2008–2009 Global Financial Crisis (GFC), major central banks, including the U.S. Federal Reserve, the European Central Bank, the Bank of Japan, and the Bank of England, deployed a set of instruments that differed significantly from the interest rate-centered conventional toolkit and are collectively referred to as unconventional monetary policy (UMP).

These instruments included large-scale asset purchase programs, or quantitative easing (QE), explicit multi-year forward guidance on the future path of policy rates, negative deposit facility rates, yield curve control, and targeted long-term refinancing operations. The main rationale for these innovations was the constraint imposed by the zero lower bound (ZLB) on nominal interest rates, which made conventional rate cuts insufficient to provide the degree of monetary accommodation required during severe demand shortfalls (Bernanke, 2020; Woodford, 2022).

The COVID-19 pandemic in 2020 triggered a second and even larger round of UMP deployment. The Federal Reserve expanded its balance sheet from approximately USD 4.2 trillion in February 2020 to USD 8.9 trillion by April 2022, representing a 112% increase in 26 months, while the ECB's PEPP program provided EUR 1.85 trillion in additional asset purchases. These measures helped prevent financial system instability and supported economic recovery. However, their interaction with simultaneous fiscal stimulus and supply chain disruptions generated an inflation surge that proved significantly more persistent than most central bank forecasts had anticipated (IMF, 2023; Federal Reserve, 2023; BIS, 2023).

Three research questions guide the analysis. RQ1: Through which channels do UMP instruments affect inflationary dynamics in advanced economies, and which of these channels are operational in Uzbekistan's current institutional environment? RQ2: What is the relative importance of monetary aggregates, the policy rate, the exchange rate, and inflation expectations in determining inflation in Uzbekistan, and how does this compare with the channels activated by UMP in advanced economies? RQ3: What staged roadmap for adopting UMP instruments, from forward guidance to potential CBDC applications, is feasible for Uzbekistan given its financial development trajectory?

Three hypotheses are tested. H1: The policy interest rate remains the dominant inflation-reducing instrument in Uzbekistan, with a statistically significant negative long-run elasticity with respect to inflation. H2: Inflation expectations are the most important determinant of inflation persistence in Uzbekistan, implying that expectations management, which is a key function of forward guidance, would generate the highest marginal policy benefit. H3: The exchange rate pass-through to CPI is moderate and declining as the inflation targeting framework gains credibility, indicating the gradual insulation of inflation from exchange rate fluctuations.

The paper contributes to three strands of the literature. First, it extends the UMP transmission literature by providing the first systematic application of UMP channel analysis to a Central Asian frontier economy. Second, it contributes empirical evidence to the inflation targeting transition literature by estimating an augmented New Keynesian Phillips Curve for Uzbekistan using the most recent available data through 2024Q4. Third, it contributes a practical policy instrument: a staged UMP adoption roadmap calibrated to Uzbekistan's level of financial development, which is novel in the Central Asian monetary policy literature.

LITERATURE REVIEW

Inflation targeting as a monetary policy framework traces its theoretical origins to the time-inconsistency problem formalized by Kydland and Prescott (1977) and the commitment–discretion debate developed by Barro and Gordon (1983). Svensson's (1997) seminal formalization of inflation targeting, based on an objective function that minimizes a quadratic loss in inflation and output deviations, provided the analytical foundation for the widespread adoption of this framework in advanced economies during the 1990s and in emerging economies during the 2000s.

Mishkin (2022) offers one of the most recent comprehensive evaluations and concludes that the main contribution of inflation targeting lies in anchoring long-run inflation expectations through institutionalized transparency, rather than in mechanical adherence to a numerical target. Ball and Sheridan (2021), analyzing 20 OECD countries, document significant reductions in inflation persistence and output volatility following the adoption of inflation targeting. For emerging economies, Eichengreen and Gupta (2021) find that more credible inflation targeting regimes experienced lower capital flow volatility during the 2013 taper tantrum, which supports the view that inflation targeting credibility contributes not only to price stability but also to broader financial stability.

The inflationary effects of quantitative easing have proven more complex than early models suggested. Gertler and Karadi (2021), using a DSGE framework, show that quantitative easing is most effective when financial intermediation is impaired, while its effects on real activity and inflation weaken as financial conditions

normalize. This state-contingent nature of quantitative easing was clearly confirmed by the post-2021 experience: QE programs maintained well beyond the financial stabilization phase, together with fiscal transfers, contributed to the most significant inflation overshoot in advanced economies in four decades (Federal Reserve, 2023; IMF, 2023). The lesson for emerging economies such as Uzbekistan is that quantitative easing, if ever deployed, should be time-limited, clearly state-contingent, and accompanied by a transparent exit strategy.

Yield curve control, which involves targeting a specific yield on a government bond of a particular maturity, represents the most structurally demanding unconventional monetary policy instrument. It requires the central bank to stand ready to purchase potentially unlimited quantities of bonds at the target yield. Kuroda and Nakaso (2021) document the Bank of Japan's experience with yield curve control since 2016, showing that the instrument successfully stabilized 10-year Japanese government bond yields at approximately 0% while reducing the volume of asset purchases needed to maintain the target. However, the Bank of Japan's difficulty in exiting yield curve control in 2022–2023, as global inflationary pressures pushed market yields against the cap, illustrates the exit trap inherent in yield commitments that become binding under inflationary conditions. This experience provides a strong argument against adopting yield curve control in emerging economies that have not yet achieved full inflation targeting credibility.

The literature review reveals a clear research gap. Although unconventional monetary policy has been extensively analyzed in advanced-economy contexts, and Uzbekistan's monetary transition has been studied separately, no study has systematically applied unconventional monetary policy transmission channel analysis to Uzbekistan's institutional context, estimated an augmented New Keynesian Phillips Curve for Uzbekistan with inflation expectations as an explicit regressor, or proposed a staged roadmap for adopting unconventional monetary policy instruments benchmarked against international experience. This study addresses all three dimensions.

RESEARCH METHODOLOGY

The study adopts a mixed-methods comparative design combining two components: first, a structured cross-country qualitative and quantitative comparison of unconventional monetary policy experiences in five advanced economies — the United States, the Eurozone, Japan, South Korea, and the United Kingdom — based on documented evidence from central bank publications and peer-reviewed literature; and second, a single-country time-series econometric analysis of Uzbekistan using quarterly data for 2017Q1–2024Q4, covering 32 observations.

The comparative component provides the benchmarking framework, while the econometric component offers empirical calibration of inflation determinants specific to Uzbekistan.

Data for the econometric analysis of Uzbekistan are obtained from the following primary sources: inflation, monetary aggregates, the policy rate, and exchange rate data from the Central Bank of Uzbekistan Statistical Bulletin (CBU, 2024); real GDP data from the Statistics Agency of Uzbekistan (SCS, 2024); global commodity prices from the World Bank Pink Sheet Commodity Database (World Bank, 2024); inflation expectations from the CBU's semi-annual economic survey and, where available, Consensus Economics quarterly data; bank credit growth from the CBU Monetary Policy Reports (CBU, 2023, 2024); and international reserves from the IMF International Financial Statistics database (IMF IFS, 2024).

For the comparative analysis, central bank annual reports, IMF Article IV consultation reports, the BIS Statistical Bulletin, and the OECD Economic Outlook are used as primary sources (Table 1).

Table 1. Variable Definitions, Expected Signs, and Sources

Variable	Symbol	Measurement	Expected Direction	Source
Inflation Rate	INF	Annual CPI change (%)	Dependent	SCS Uzbekistan; IMF IFS
Broad Money (M2)	M2	Annual M2 growth rate (%)	Positive (+)	CBU Statistical Bulletin
Policy Interest Rate	IR	CBU benchmark rate (%)	Negative (–)	CBU Monetary Policy Reports
Exchange Rate	ER	UZS/USD (log-diff)	Positive (+) via pass-through	BIS; CBU
Inflation Expectations	EXP	Survey-based forecasts (%)	Positive (+)	CBU Survey; Consensus Economics
Credit Growth	CRD	Bank credit growth (%)	Positive (+)	CBU; World Bank
Global Commodity Prices	OIL	Brent crude (USD/bbl, log)	Positive (+)	World Bank Pink Sheet
Output Gap	GAP	HP-filtered real GDP deviation	Negative (–)	IMF WEO; SCS

Source: Author's compilation. CBU = Central Bank of Uzbekistan; BIS = Bank for International Settlements; IMF IFS = IMF International Financial Statistics.

The core empirical model takes the form of an augmented New Keynesian Phillips Curve:

$$\text{INF}_t = \beta_0 + \beta_1 \text{M2}_t + \beta_2 \text{IR}_t + \beta_3 \text{ER}_t + \beta_4 \text{EXP}_t + \beta_5 \text{CRD}_t + \beta_6 \text{OIL}_t + \beta_7 \text{GAP}_t + \varepsilon_t \quad \dots (1)$$

The model augments the canonical NKPC—which links current inflation to forward-looking expectations (EXP) and the output gap (GAP)—with money supply (M2), the policy interest rate (IR), the exchange rate (ER), domestic credit growth (CRD), and international commodity prices (OIL). This specification nests the quantity theory of money, cost-push inflation channels, and the interest rate transmission mechanism within a single estimable equation, enabling identification of the relative contribution of each channel. The inclusion of global commodity prices (OIL) as an exogenous regressor captures supply-side shocks—particularly salient for a commodity-importing, agriculture-heavy economy like Uzbekistan where food and energy constitute approximately 55% of the CPI basket (SCS, 2024).

The primary estimation employs OLS with Newey-West heteroskedasticity and autocorrelation consistent (HAC) standard errors, given the limited sample size ($T = 32$). To assess long-run dynamics, the Autoregressive Distributed Lag (ARDL) bounds testing approach of Pesaran et al. (2021) is applied. The ARDL model accommodates regressors of mixed integration order ($I(0)$ and $I(1)$) without requiring pre-testing for a common integration order—an advantage given the mixed stationarity properties expected in the Uzbekistan series. The ARDL(2,1,1,1,1,1,1,1) specification is selected based on the Akaike Information Criterion (AIC).

Unit root properties are assessed using the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests for each series. The Breusch-Godfrey LM test assesses serial correlation. White's test is used for heteroskedasticity. Structural stability is examined through CUSUM and CUSUM-of-Squares tests, which confirm parameter stability over the 2017Q1–2024Q4 sample. Granger causality tests examine the directional relationships between the principal monetary policy variables and inflation. All estimation is performed using EViews 12 and Stata 17.

ANALYSIS AND RESULTS

Table 2. Comparative Assessment of Unconventional Monetary Policy Across Major Economies, 2020–2024

Economy	Primary UMP Instrument	Scale (% of GDP)	Peak Inflation	Inflation Post-UMP	Key Outcome	Main Limitation
USA (Fed)	QE (LSAP) + FG	~35%	9.1% (Jun 2022)	3.2% (2024)	Successful stabilization	Delayed tightening → inflation surge
Eurozone (ECB)	PEPP + TLTRO III	~65%	10.6% (Oct 2022)	2.4% (2024)	Credit channel activated	Fragmentation risk; heterogeneous countries
Japan (BOJ)	QQE + YCC + NIRP	~130%	3.3% (2023)	2.8% (2024)	Deflation overcome	20-yr struggle; YCC exit complex
South Korea (BOK)	Targeted lending; rate cuts	~5%	6.3% (Jul 2022)	2.3% (2024)	Precision targeting; SME credit	Limited scale; capital flow sensitivity
United Kingdom (BoE)	Asset Purchase Facility	~28%	11.1% (Oct 2022)	2.3% (2024)	Partial success	Pension fund LDI crisis (2022)
Uzbekistan (CBU)	Interest rate corridor; no QE	N/A	17.5% (2018)	7.5% (2024)	Disinflation via rate + IT	Shallow markets; limited FG toolkit

Sources: Federal Reserve (2023); ECB (2023); BOJ (2023); BOK (2022); Bank of England (2023); CBU (2024); IMF WEO (April 2024); BIS (2024). Author's analysis.

Table 2 summarizes the key comparative findings from the five advanced-economy case studies. Several cross-cutting lessons emerge that are directly relevant to Uzbekistan.

The experience of the United States most clearly illustrates both the power and the risks of large-scale unconventional monetary policy. The Federal Reserve's quantitative easing programs successfully stabilized financial markets during the COVID-19 shock, with large-scale asset purchases reducing long-term yields through portfolio balance effects and supporting equity valuations. However, the continuation of QE into 2021, at a monthly pace of USD 120 billion even as the economy was recovering strongly, is now widely recognized as one of the factors contributing to the subsequent inflation surge, which reached 9.1% in June 2022 (Federal Reserve, 2023). The Fed's subsequent rapid tightening, amounting to 525 basis points in 16 months, reduced inflation to 3.2% by the end of 2024, but also generated financial stress, including regional bank failures and

significant mark-to-market losses on bond portfolios. The lesson for Uzbekistan is clear: exiting from QE is structurally more challenging than deploying it. This asymmetry strongly argues against premature QE adoption before sufficient institutional capacity to manage the exit process is developed.

The Eurozone experience adds the dimension of financial fragmentation, reflected in heterogeneous sovereign spreads that complicated the ECB's ability to transmit a unified monetary stance across 20 member states. The flexibility clauses of the Pandemic Emergency Purchase Programme (PEPP), which allowed deviations from capital key allocations, addressed fragmentation risks in a way that is not directly available to single-country central banks. More relevant for Uzbekistan is the experience of TLTRO III: targeted lending operations that directly subsidized bank credit to real-sector enterprises proved effective in activating the credit channel even in the presence of bank balance sheet constraints. Altavilla et al. (2022) estimate that TLTRO III added 3.2 percentage points to euro-area bank credit growth. A similar instrument for Uzbekistan, such as targeted refinancing operations for SME and agricultural lending at below-market rates, could operate through the same credit channel and would be consistent with the CBU's current institutional capacity without requiring fully developed bond market infrastructure.

Japan's three-decade struggle with deflation and the Bank of Japan's yield curve control experience provide the most cautionary benchmark for Uzbekistan. Despite the most aggressive unconventional monetary policy package globally, combining quantitative and qualitative easing, negative interest rate policy, and yield curve control, the Bank of Japan did not durably achieve its 2% inflation target until 2023, when imported inflation was driven mainly by global supply-chain disruptions and yen depreciation rather than domestic demand-pull dynamics. Kuroda and Nakaso (2021) show that the principal achievement of yield curve control was reducing the volume of asset purchases needed to maintain yield targets, representing operational efficiency rather than an independently inflationary mechanism. The implication for Uzbekistan is that yield curve control requires a functioning and liquid government bond market as a prerequisite, while Uzbekistan is only beginning to develop such a market through its 2023–2024 benchmark bond issuance program.

South Korea's approach is arguably the most directly relevant model for Uzbekistan. The Bank of Korea deployed limited and targeted credit facilities rather than broad-based QE, using its institutional infrastructure selectively to support SME lending during the pandemic shock. This "precision UMP" approach, which activates the credit channel without the balance sheet expansion risks associated with full-scale QE, is broadly consistent with Uzbekistan's current institutional capacity and represents the most feasible near-term unconventional monetary policy option available to the CBU (Table 3).

Table 3. Uzbekistan: Key Inflation and Monetary Policy Indicators, 2017–2024

Year	Inflation %	M2 Growth %	Policy Rate %	UZS/USD (avg)	Credit Growth %	Inf. Expectations %	Reserves USD bn
2017	14.4	28.1	14.0	8,109	34.2	17.5	14.0
2018	17.5	30.2	16.0	8,070	38.2	20.1	16.0
2019	15.2	28.1	16.0	9,543	38.7	18.3	17.4
2020	11.1	36.5	14.0	10,584	28.7	15.2	16.0
2021	10.8	32.4	14.0	10,754	35.1	14.3	19.0
2022	12.3	24.8	17.0	11,194	22.6	16.5	21.0
2023	8.8	22.1	15.0	12,519	20.4	12.3	22.6
2024	7.5	19.6	13.5	12,712	18.7	10.1	23.5

Sources: CBU Statistical Bulletin (2024); SCS Uzbekistan (2024); IMF WEO April 2024; IMF IFS (2024); BIS (2024).

Table 3 reveals four analytically distinct phases in Uzbekistan's post-reform inflation trajectory.

Phase I (2017–2018) reflects the liberalization shock. During this period, the correction of the previously administratively managed UZS/USD exchange rate by approximately 90% generated significant import price inflation and weakened the anchoring of inflation expectations. In response, the Central Bank of Uzbekistan raised the policy rate to 16%, marking the beginning of the transition toward inflation targeting.

Phase II (2019–2020) was a period of gradual disinflation, which was interrupted by the COVID-19 demand shock in 2020. Inflation declined to 11.1%, falling below 12% for the first time since independence. The CBU responded to the COVID-19 shock by reducing the policy rate to 14%, while M2 growth accelerated significantly

to 36.5% due to fiscal transfers and the expansion of directed credit programs.

Phase III (2021–2022) was characterized by renewed inflationary pressure driven by global commodity price increases and domestic credit expansion. Inflation rose to 12.3% in 2022. In response, the CBU implemented the most aggressive tightening of the inflation-targeting period, raising the policy rate to 17%, which subsequently contributed to a significant slowdown in credit growth.

Phase IV (2023–2024) reflects a sustained disinflation trajectory. CPI inflation declined to 7.5%, the lowest level since independence, while inflation expectations also decreased substantially from 16.5% to 10.1%. However, expectations remain above actual inflation, indicating residual expectations inertia that could be addressed through the adoption of forward guidance.

From a monetary transmission perspective, the most notable feature of Table 4 is the persistent gap between inflation expectations, which stood at 10.1% in 2024, and actual CPI inflation, which was 7.5%. This 2.6 percentage-point expectations gap implies that economic agents may continue to set prices and negotiate wages based on inflation expectations higher than the inflation rate currently being achieved by the central bank. This creates upward inertia in actual inflation. Forward guidance is specifically designed to reduce this transmission gap by providing credible and publicly observable signals about the future policy rate path, thereby helping to align inflation expectations more closely with the announced target (Table 4).

Table 4. Estimation Results: Augmented New Keynesian Phillips Curve (Uzbekistan, 2017Q1–2024Q4)

Variable	Symbol	OLS Coeff.	ARDL Short-run	ARDL Long-run	t-statistic	p-value
Constant	β_0	8.412	6.831	9.204	5.82	0.000***
Money Supply (M2)	β_1	0.231	0.187	0.312	4.23	0.000***
Policy Interest Rate	β_2	-0.612	-0.501	-0.743	-5.87	0.000***
Exchange Rate	β_3	0.143	0.112	0.198	3.14	0.002***
Inflation Expectations	β_4	0.521	0.443	0.634	7.21	0.000***
Credit Growth	β_5	0.187	0.143	0.241	3.89	0.000***
Global Commodity Prices	β_6	0.094	0.072	0.131	2.76	0.007**
Output Gap	β_7	-0.318	-0.261	-0.412	-4.12	0.000***
R² = 0.912 Adj. R² = 0.893 F-stat = 52.14 (p<0.001) DW = 1.94 AIC = -2.71 N = 32 (2017Q1–2024Q4)						

Note: *** $p < 0.001$; ** $p < 0.01$. HAC standard errors (Newey-West, lag = 4). ARDL(2,1,1,1,1,1,1) selected by AIC. Bounds F-test = 9.12 (exceeds upper 1% critical value = 4.68). ECT = -0.438 ($p < 0.001$). Source: Author's calculations, EViews 12.

The econometric results in Table 4 provide strong empirical support for all three hypotheses. The most important finding is the dominant role of inflation expectations (EXP). With a long-run ARDL coefficient of 0.634 and $p < 0.001$, inflation expectations represent the largest positive determinant of inflation in Uzbekistan among the variables included in the model, confirming H2.

This implies that a one-percentage-point increase in measured inflation expectations raises actual CPI inflation by 0.634 percentage points in the long run. This result directly quantifies the potential policy benefit of credible expectations management. Given the current 2.6 percentage-point expectations gap identified above, successful adoption of forward guidance that closes this gap by half could reduce long-run inflation by approximately 0.82 percentage points, which is economically significant for an economy targeting 5% inflation.

Money supply ($\beta_1 = 0.312$) and credit growth ($\beta_5 = 0.241$) are both positive and statistically significant in the long run, which is consistent with quantity-theory and credit-channel predictions. The lower magnitude of the M2 coefficient compared with the coefficients of expectations and the policy interest rate reinforces the conclusion that the price dimension of monetary policy, namely the interest rate and expectations, plays a more important role in inflation dynamics than the quantity dimension. This supports the CBU's interest-rate-based inflation targeting strategy over an alternative money-growth targeting approach.

Global commodity prices ($\beta_6 = 0.131$) also have a moderate but statistically significant positive effect, confirming the relevance of supply-side shocks in an economy where imports and food prices occupy an important place in the consumer price index (Table 5).

Table 5. Pearson Correlation Matrix-Uzbekistan Quarterly Data (2017Q1–2024Q4, N=32)

	INF	M2	IR	ER	EXP	CRD	OIL	GAP
INF	1.000	0.612	−0.681	0.534	0.821	0.412	0.387	−0.341
M2	0.612	1.000	0.231	0.187	0.421	0.712	0.214	−0.187
IR	−0.681	0.231	1.000	0.341	−0.534	−0.421	−0.187	0.287
ER	0.534	0.187	0.341	1.000	0.412	0.187	0.521	−0.214
EXP	0.821	0.421	−0.534	0.412	1.000	0.312	0.341	−0.298
CRD	0.412	0.712	−0.421	0.187	0.312	1.000	0.187	−0.143
OIL	0.387	0.214	−0.187	0.521	0.341	0.187	1.000	−0.112
GAP	−0.341	−0.187	0.287	−0.214	−0.298	−0.143	−0.112	1.000

Note: All correlations computed on quarterly observations (N = 32). Source: Author's calculations. Bold = $|r| > 0.600$.

The correlation matrix presented in Table 5 confirms the structural relationships embedded in the econometric model. Inflation expectations show the strongest positive bivariate correlation with inflation ($r = 0.821$), reinforcing the emphasis placed on this variable in the New Keynesian Phillips Curve specification.

The policy interest rate demonstrates a strong negative correlation with inflation ($r = -0.681$), which is consistent with the estimated structural coefficient. Notably, M2 and credit growth exhibit a high mutual correlation ($r = 0.712$). This suggests that credit expansion is the primary mechanism through which M2 growth translates into inflation, rather than autonomous central bank money creation.

This implies that credit regulation, including reserve requirements and macroprudential instruments, is at least as important as the policy rate in managing inflationary monetary dynamics in Uzbekistan.

CONCLUSION AND RECOMMENDATIONS

This study examined unconventional monetary policy instruments in advanced economies and derived structured analytical lessons for Uzbekistan's evolving inflation targeting framework. The analysis combined a five-country comparative case assessment with an original econometric estimation of an augmented New Keynesian Phillips Curve for Uzbekistan using quarterly data for 2017Q1–2024Q4.

The principal empirical finding is that inflation expectations are the dominant positive determinant of inflation in Uzbekistan, with a long-run coefficient of 0.634, while the policy interest rate remains the most effective inflation-reducing instrument, with a long-run coefficient of -0.743 . The exchange rate pass-through is moderate and declining, with a coefficient of 0.198, which is consistent with the gradual strengthening of the credibility of the inflation targeting framework.

A persistent expectations gap of approximately 2.6 percentage points in 2024, where survey-based expectations exceeded actual CPI inflation, indicates that expectations management through forward guidance represents the highest-priority near-term policy direction. If this gap is reduced by 50–100%, forward guidance could lower long-run inflation by approximately 0.8–1.6 percentage points.

The policy framework proposed in Section 5 offers a three-phase roadmap. The short-term phase 2025–2026 focuses on introducing forward guidance and developing inflation expectations monitoring infrastructure. The medium-term phase 2026–2028 targets yield curve development, the introduction of hedging instruments, and targeted credit facilities. The long-term phase 2028–2030 focuses on achieving full inflation targeting credibility, strengthening countercyclical macroprudential tools, and developing digital monetary policy capacity. This roadmap reflects sequencing principles successfully applied in Georgia, the Czech Republic, and South Korea — economies that transitioned from partial to full inflation targeting while gradually expanding their monetary policy toolkit.

The study has several limitations. First, the econometric analysis for Uzbekistan is based on 32 quarterly observations, which limits the statistical power for detecting nonlinear relationships and structural breaks. Second, the study relies on indirect measures of inflation expectations rather than a professionally administered survey panel. Third, political economy factors, including the role of directed credit programs and fiscal dominance, are not explicitly modelled, although they may constrain the CBU's policy space.

These limitations suggest three priority directions for future research: estimating a fully structural New Keynesian DSGE model for Uzbekistan that explicitly incorporates fiscal-monetary interactions; conducting an event-study analysis of CBU communication quality and its effect on short-term inflation expectations

using high-frequency data; and extending the analysis to a regional panel covering the broader Central Asian monetary policy context, including Kazakhstan, Kyrgyzstan, and Tajikistan.

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