ISSN Online: 3006-4708
ISSN Print: 3006-4694
SOCIAL SCIENCE REVIEW ARCHIVES
https://policyjournalofms.com

Nexus Between Money Supply and Inflation in Pakistan

Asfandyar[1], Muhammad Uzair[2]
[1] Assistant professor, Govt. Khushal Khan Khattak Degree College, Akora Khattak.
Email: asfandyar1980@gmail.com
[2] BS Economics, Govt. Khushal Khan Khattak Degree College, Akora Khattak.
Email: muzair2522003@gmail.com

DOI: https://doi.org/10.70670/sra.v3i4.1401

Abstract
This study examines the relationship between money supply and inflation in Pakistan using annual data from 2000-2024. The research aimed to empirically investigate the long-run relationship between money supply growth and inflation, to analyze the short-run dynamics and to assess the relative importance of inflationary persistence with identifying significant structural breaks in the inflation process in Pakistan. The empirical investigation proceeded through a structured sequence of tests by beginning with unit root tests which established a mixed order of integration among the variables therefore justifying the application of the ARDL bounds testing approach to cointegration. The core of the analysis involved estimating multiple regression models including contemporary dynamic distributed lag, and error correction model, followed by diagnostic and robustness checks to validate the findings. . The study concludes that there exists no significant long-run relationship between money supply growth and inflation. Instead, inflation is primarily driven by strong inertia, where previous inflation substantially influences current rates, alongside structural factors and external shocks like the COVID-19 pandemic. The real interest rate shows no significant impact on inflation. These results challenge conventional monetary policy approaches, indicating that inflation in Pakistan is not primarily a monetary phenomenon but stems from structural rigidities and persistent inflationary expectations.

Keywords: Money supply, Inflation, Real interest rate, monetary policy and GDP growth

1. Introduction

Inflation is a continuous and widespread rise in the general level of prices and a key challenge for governments and central banks (King, 1996). Economists have different theories about its causes; some emphasize the role of money supply, while others focus on demand pressures, rising costs, or structural problems in the economy (Palley,1994). For a country like Pakistan, which has repeatedly experienced high and volatile inflation, understanding these causes is critically important (Kumar et al, 2025). Pakistan's economy is particularly sensitive to factors such as the cost of imported fuel, fluctuations in agricultural production and its domestic fiscal situation (Khan & Ahmed, 2011). This complex reality makes it an ideal case to examine the relationship between money supply and inflation.

Pakistan's inflation crisis stands as one of the most alarming economic phenomena in recent years positioning the country among the hardest hit emerging economies in Asia. Between 2022 and 2024, it experienced an unprecedented surge in prices with inflation reaching a five-decade high of 38% in May 2023 (Mohanty & Klau 2001).. At the heart of this crisis lies a convergence of three interrelated shocks that collectively destabilized Pakistan's price system. Falak et al (2024) The first is the currency collapse, marked by the PKR's

depreciation of more than 50% against the US dollar between 2021 and 2023. This sharp decline drastically inflated the cost of imported goods such as fuel, medicines and industrial raw materials by creating a cascade of price increases throughout the economy. The second driver is the energy price shock which is primarily induced by the withdrawal of subsidies under the International Monetary Fund (IMF) stabilization program. Electricity and gas tariffs rose by over 60% in 2023 alone amplifying production costs across industries and fueling inflationary expectations. The third and most devastating factor is the agricultural crisis triggered by severe climate shocks. The 2022 floods among the worst in Pakistan's history destroyed key crops disrupted supply chains and caused food inflation to exceed 40% further worsening living conditions for millions.

The central problem addressed by this research is the persistent empirical ambiguity surrounding the relationship between money supply growth and inflation despite the theoretical primacy of this relationship in the State Bank of Pakistan's policy framework. The disconnect between monetary expansion and inflationary outcomes creates significant challenges for effective policy formulation, potentially leading to either insufficient or excessively restrictive policy responses with real economic costs. This ambiguity is particularly problematic in the current context of high global inflation and domestic economic vulnerabilities, warrants further investigation into the issue for improving our understanding and prescribing appropriate policy options.The study proceed with the literature review in section II, methodology in section III, data analysis in section IV and conclusions in Section V subsequently.

2. Literature Review

The section focuses on theoretical foundation, empirical evidence in global context and evidence from Pakistan as follows.

2.1 Theoretical Perspectives on Money Supply and Inflation

The theoretical underpinnings of the relationship between money supply and inflation have long been dominated by two competing paradigms: the monetarist and structuralist schools of thought. The monetarist perspective most famously articulated by Friedman (1963) posits that inflation is fundamentally a monetary phenomenon, asserting that a sustained increase in the money supply relative to real economic output inevitably leads to a proportional rise in the general price level. This view emphasizes the central role of monetary authorities in controlling inflation through careful management of monetary aggregates suggesting that fiscal discipline and independent central banking are essential for price stability (Friedman, 1963). The monetarist argument rests on the quantity theory of money where changes in the money supply directly translate into price level adjustments over the long run, making monetary policy the primary tool for inflation control.

In direct contrast, the structuralist theorists argue that in developing economies, inflation stems primarily from structural rigidities and supply-side constraints rather than monetary factors alone. Bilquees (1988) contended that in the specific context of Pakistan inflation results from agricultural bottlenecks, inefficient distribution systems, and institutional weaknesses that constrain supply responses to increasing demand. They emphasize that administered price adjustments in key sectors like energy and transportation along with the external shocks such as oil price fluctuations and exchange rate depreciation, play a more significant role in driving inflation than monetary expansion (Bilquees, 1988). This theoretical divide has profound implications for policy formulation, as monetarists would advocate for tight monetary control while structuralists would emphasize the need for structural reforms and supply end interventions to address inflationary pressures.

2.2 Empirical Evidence from Global Contexts

The empirical literature examining the relationship between money supply and inflation spans multiple continents and economic systems providing substantial evidence supporting both theoretical perspectives while highlighting variations. African economies have provided particularly insightful case studies with

Imimole and Enoma (2011) demonstrating that monetary expansion and exchange rate depreciation were significant determinants of inflation in Nigeria, confirming the importance of monetary factors and external shocks. Further supporting the complexity of this relationship, Denbel et al. (2016) identified bidirectional causality between money supply and inflation in Ethiopia suggesting a self-reinforcing cycle where monetary expansion fuels inflation that in turn increases the demand for money. This finding indicates that the relationship between money supply and inflation is not merely unidirectional but involves complex feedback mechanisms that can exacerbate inflationary pressures in developing economies.

Asian economies have yielded equally compelling evidence about the money inflation nexus, with studies across the continent validating the significance of monetary factors. Jiranyakul (2016) utilized sophisticated econometric techniques to demonstrate that monetary policy shocks had substantial and persistent effects on inflation in Thailand by underscoring the potency of monetary transmission mechanisms. Similarly, Majumder (2016) corroborated these findings for Bangladesh showing that changes in policy rates and reserve money significantly influenced price levels through various channels. The connection between fiscal policy its monetary financing and inflation has been particularly well-documented in small island economies. Narayan et al. (2019) identifying monetary expansion linked to fiscal deficits as a primary driver of inflation in Fiji. This finding aligns with broader comparative research by Lim and Sek (2015) who established that monetary growth serves as a persistent and powerful determinant of inflation, with its effect being markedly stronger in high-inflation countries compared to their low-inflation counterparts.

2.3 Empirical Evidence from Pakistan

Pakistan's unique economic landscape characterized by persistent fiscal deficits, energy shortages and agricultural dependencies has generated a substantial body of empirical research examining the drivers of inflation within its specific context. The seminal work of Khan and Schimmelpfennig (2006) perfectly encapsulates the dual nature of inflation analyzing whether it is driven primarily by monetary factors or supply-side constraints like wheat shortages. Their research concluded that while supply shocks could trigger initial price increases, it was the accommodative monetary policy response often necessitated by fiscal deficit financing that transformed these relative price changes into generalized inflation. This finding established a crucial framework for understanding inflation as a sequential process where structural triggers are amplified by monetary accommodation.

Subsequent research has further refined our understanding of inflation dynamics, with Qayyum (2006) employing cointegration analysis to establish a stable long run relationship between money supply (M2) and the price level, strongly supporting the monetarist proposition for sustained inflationary trends. The critical role of external factors has been extensively documented with Husain (2006) demonstrating a significant exchange rate pass through effect, whereby depreciations of the PKR rapidly transmitted to higher domestic inflation through increased import costs. More recent studies have incorporated additional variables and more sophisticated methodologies. Ali et al. (2022) using a Vector Error Correction Model to confirm that while external factors like oil prices and exchange rates exert strong short run influences on inflation, money supply growth remains the dominant force behind long-run inflationary trends. Complementing these findings, Malik and Ahmed (2020) highlighted the role of inflation expectations finding that once inflation becomes entrenched in public perception, it becomes a self-fulfilling prophecy that makes the central bank's stabilization efforts considerably more challenging.

3. Research Methodology

This section delineates the empirical framework designed to rigorously investigate the nexus between money supply and inflation in Pakistan. The primary objective is to construct a robust econometric model capable of discerning both the short-term dynamics and the long run equilibrium relationship between these variables while controlling for other key macroeconomic determinants. A paramount consideration in the model

specification has been the replicability and consistency of the data. Consequently, all variables for this study are sourced exclusively from the World Bank's World Development Indicators (WDI) database a repository renowned for its standardized and harmonized cross-country data thereby ensuring the reliability and verifiability of the dataset. The ensuing sections provide a comprehensive exposition of the data, the theoretical framework the econometric model specification and the sophisticated time-series techniques that will be employed to yield valid and policy-relevant inferences.

3.1 Data Collection and Variable Construction

3.1.1 Data Source and Temporal Coverage

The empirical analysis for this thesis is predicated on secondary; macro level time series data procured from the WDI database. The selection sole data source is motivated by its global acceptance in economic research the methodological consistency it provides across time and variables, and its role in facilitating the replicability of this study. The study utilizes annual data for Pakistan spanning the period from 2000 to 2024. This period is strategically selected as it encompasses significant economic transitions in country's history including periods of structural reform varying monetary policy regimes and distinct inflationary episodes thereby providing a sufficiently long and varied series for a robust time-series analysis.

3.1.2 Variable Definition and Theoretical Justification

The operationalization of variables is conducted with direct reference to established economic theory and contemporary empirical practice. All variables are selected based on their theoretical importance and their consistent availability within the WDI database.

The dependent variable for this study is the Inflation Rate (INF), which is operationalized as the annual percentage change in the Consumer Price Index (CPI). The CPI is the most salient indicator of cost-of-living changes and serves as the central gauge for inflationary pressures within an economy making it the standard choice for cross-country inflationary studies.

The independent variable of paramount theoretical interest is Money Supply (M2) measured as the annual growth rate of Broad Money. This aggregate provides a comprehensive measure of the monetary stock within the economy. Its inclusion allows for a direct empirical assessment of the core monetarist proposition that sustained expansions in the monetary base are a primary driver of general price level increases.

3.2 Theoretical Framework and Model Specification

The analytical foundation of this thesis is rooted in the Quantity Theory of Money formalized in the Fisherian Equation of Exchange, **MV=PY*MV=PY***. Expressed in growth rates the theory suggests that, holding the velocity of money (V) constant and assuming long run stability in real output (Y), growth in the money supply (M) will transmit directly into growth in the price level (P).

3.2.2 Econometric Model

$$INF_t=\beta0+\beta1M2t+\beta2RIRt+\beta3GDP\_Gt+\epsilon t$$

The subscript t denotes the time period (year). The term β0 represents the constant intercept. The coefficients β1,β2, and $\beta3$ are the parameters of primary interest, quantifying the partial effect of a one-unit change in money supply growth, the real interest rate, and GDP growth, respectively, on the inflation rate. The stochastic error term ϵt, is assumed to capture the influence of all omitted variables and random disturbances, and it is initially assumed to satisfy the classical linear regression model assumptions of zero mean, constant variance, and no serial correlation.

3.3 Econometric Methodology

The estimation procedure follows a sequential multi-stage protocol meticulously designed to address the specific properties of time series data and to avoid the pervasive problem of spurious regression.

3.3.1 Pre Estimation Diagnostics: Unit Root Testing

The preliminary and critical step in time-series econometrics is to determine the order of integration of each variable via unit root testing. The presence of a unit root indicates that the series is non-stationary and regressing such series can yield statistically significant relationships where none truly exist. This analysis will employ the Augmented Dickey-Fuller (ADF) test. The ADF test statistic is derived from estimating the following regression for each variable:

$$\Delta Yt=\alpha+\beta t+\gamma Yt-1+\sum i=1p\delta i\Delta Yt-i+ut$$

Where Δ is the first-difference operator, α is a constant, βtis a linear time trend, and p is the lag length selected automatically using the Schwarz Information Criterion (SIC) to ensure the residuals *ut* are white noise. The null hypothesis $H0:\gamma=0$ signifies the presence of a unit root. Failure to reject the null hypothesis at levels necessitates testing on first-differenced data. A variable is declared integrated of order one, I(1), if it becomes stationary after first differencing.

3.3.2 Cointegration Analysis and Long-Run Equilibrium

Should the variables be confirmed as I(1), the subsequent step is to test for cointegration the existence of a stable long-run equilibrium relationship among them. This study will utilize the Johansen (1991) cointegration procedure which is based on the Vector Error Correction Model (VECM) and is superior for multivariate systems. The Johansen procedure involves estimating a VECM of the form:

$$\Delta Xt=\Pi Xt-1+\sum i=1p-1\Gamma i\Delta Xt-i+\Psi Dt+\epsilon t\Delta Xt$$

Xt is a vector of the I(1) variables Δ is the difference operator Γi are matrices of short-run coefficients *Dt* represents deterministic components and $\Pi\Pi$ is the impact matrix whose rank determines the number of cointegrating vectors. The trace test and the maximum eigenvalue test will be conducted to ascertain the cointegrating rank, *r*. Finding at least one cointegrating vector would imply a stable long run relationship among the variables.

3.3.3 Estimation of the Vector Error Correction Model (VECM)

The identification of cointegration necessitates the estimation of a VECM to capture both short run dynamics and the adjustment process towards long run equilibrium. The specific VECM for the inflation equation can be expressed as:

$$\Delta INFt=\alpha0+\lambda ECTt-1+\sum i=1k\phi i\Delta M2t-i+\sum i=1k\theta i\Delta RIRt-i+\sum i=1k\psi i\Delta GDP\_Gt-i+\nu t\Delta INFt$$

The Error Correction Term (ECT), ECTt−1, is the lagged residual from the estimated long-run cointegrating equation. The coefficient λ, the speed of adjustment parameter is of critical theoretical importance. A negative and statistically significant λ provides direct evidence of a self-correcting mechanism whereby deviations from the long-run equilibrium in one period are partially corrected in the next, thus confirming the existence of a long-run causal relationship.

3.5 Hypothesis Testing

The empirical model is designed to formally test the following null hypothesis, which is central to the research inquiry:

- **H_0:** $\beta 1=0 \beta 1=0$. There is no statistically significant long-run relationship between money supply growth and the inflation rate in Pakistan.

The alternative hypothesis, which aligns with the core theoretical postulate of monetarism, is:

- **H_1:** $\beta 1>0 \beta 1>0$. There is a positive and statistically significant long-run relationship between money supply growth and the inflation rate in Pakistan.

4. Analysis

The analysis focuses on four key variables: inflation rate measured by consumer price index changes, broad money supply growth, real GDP growth, and real interest rates. This temporal framework captures multiple economic cycles, including periods of relative stability, high inflation episodes, and the unprecedented disruption caused by the COVID-19 pandemic.

Stationarity and Integration Analysis

The foundation of time series econometrics rests on the stationarity properties of the variables under investigation. Table 4.1 presents the results of formal unit root testing using both Augmented Dickey Fuller and Phillips Perron methodologies.

Table 4.1: *Unit Root Test Results*

Variable	Test Specification	ADF Statistic	PP Statistic	Integration Order
Inflation Rate	With Trend	-3.009 (0.1296)	-2.921 (0.1556)	I(1)
Money Supply Growth	With Trend	-4.318 (0.0030)	-4.745 (0.0006)	I(0)
GDP Growth	With Trend	-3.530 (0.0363)	-3.800 (0.0166)	I(0)
Real Interest Rate	With Trend	-1.473 (0.8381)	-1.936 (0.6360)	I(1)

The stationarity analysis yields crucial insights for model specification. The results indicate mixed orders of integration, with inflation and real interest rate exhibiting non-stationarity in levels while money supply and GDP growth demonstrate stationarity. This mixed integration structure necessitates the application of the Autoregressive Distributed Lag bounds testing approach which remains valid regardless of the integration order of the variables provided none are integrated of order two or higher.

The finding that money supply growth is stationary in levels represents a particularly noteworthy result, suggesting that monetary expansions may not follow a persistent cumulative pattern that would typically generate sustained inflationary pressures according to monetarist theory.

Cointegration Analysis and Long-Run Relationships

The central research question of this investigation concerns the existence of a stable long-run equilibrium relationship between money supply growth and inflation. To address this question empirically the study employs the ARDL bounds testing approach developed by Pesaran, Shin, and Smith (2001). The results of this analysis are presented in Table 4.2.

Table 4.2: *ARDL Bounds Test for Cointegration*

Test Component	Statistical Value	Probability Value	Interpretation
F-Statistic	1.06	0.4160	No Cointegration
Error Correction Term	-0.417	0.066	Weak Adjustment
Critical Value (5%)	3.23 (Lower) 4.35 (Upper)	-	F-statistic below lower bound

The bounds test results provide compelling evidence against the existence of a long run cointegrating relationship between money supply and inflation in Pakistan. The computed F-statistic of 1.06 falls below the lower critical value bound of 3.23 at the 5 percent significance level, leading to the unambiguous conclusion that no stable long-run equilibrium exists among the variables in the system.

The error correction term while bearing the theoretically correct negative sign demonstrates only marginal statistical significance with a p-value of 0.066. This weak error correction mechanism further corroborates the absence of a robust long-run relationship, indicating that deviations from any implied equilibrium do not trigger systematic correction processes within the Pakistani economy. This finding represents a fundamental challenge to monetarist economic theory, which posits a stable long-run relationship between monetary expansions and price level movements. The absence of such a relationship suggests that structural characteristics of the economy may disrupt conventional monetary transmission mechanisms. Potential explanations include the significant informal sector extensive administered pricing, foreign exchange constraints and supply side rigidities that characterize many developing economies.

Short-Run Dynamic Relationships

4.5.1 Contemporary Relationships Analysis

The investigation of short run dynamics begins with the estimation of a contemporary relationship model examining the simultaneous association between inflation and its potential determinants.

Table 4.3 presents the results of these ordinary least squares estimation.

Table 4.3: *Contemporary Relationship Model Estimates*

Explanatory Variable	Coefficient Estimate	Standard Error	t-Statistic	Probability Value
Money Supply Growth	-0.101	0.199	-0.50	0.620
GDP Growth	-1.453	0.639	-2.27	0.034
Real Interest Rate	-0.364	0.556	-0.65	0.520
Constant Term	15.065	3.757	4.01	0.001
R-squared	0.870			
Adjusted R-squared	0.845			

The contemporary model reveals several important patterns i inflationary process. Most notably, money supply growth demonstrates no statistically significant relationship with contemporaneous inflation with a coefficient of -0.101 that fails to achieve conventional significance levels. This finding further challenges the monetarist proposition that monetary expansions directly translate into price level increases.

GDP growth exhibits a statistically significant negative relationship with inflation contradicting conventional demand-pull inflation theory. This inverse relationship may reflect improved agricultural outputs or industrial production that alleviate supply constraints, thereby dampening inflationary pressures despite economic expansion. The real interest rate coefficient while bearing the theoretically expected negative sign, lacks statistical significance suggesting limited immediate impact of monetary policy stance on inflation through the interest rate channel. The model explains approximately 87 percent of inflation variation indicating that substantial portions of inflationary dynamics remain attributable to these variables.

4.5.2 Dynamic Specification with Lagged Effects

Recognizing that economic relationships often manifest with temporal lags the analysis proceeds to estimate a dynamic model incorporating lagged values of all variables. The results, presented in Table 4.4, reveal more nuanced relationships than the contemporary specification.

Table 4.4: *Dynamic Model with Lagged Effects*

Explanatory Variable	Coefficient Estimate	Standard Error	t-Statistic	Probability Value
Lagged Inflation	0.790	0.164	4.81	0.000
Lagged Money Supply	-0.194	0.150	-1.29	0.212
Lagged GDP Growth	1.029	0.534	1.93	0.069
Lagged Real Interest Rate	-0.323	0.433	-0.75	0.465
Constant Term	1.434	3.741	0.38	0.706
R-squared	0.927			
Adjusted R-squared	0.874			

The dynamic model yields several crucial insights. Most prominently the lagged inflation demonstrates a highly statistically significant positive coefficient of 0.790 which indicating strong inflationary persistence. This finding suggests that current inflation is substantially influenced by its own past values consistent with adaptive expectations formation and wage-price spirals that characterize many developing economies.

Lagged money supply growth continues to demonstrate statistical insignificance reinforcing the conclusion that monetary expansions do not systematically influence inflation even when accounting for temporal delays in transmission mechanisms. The coefficient estimates of -0.194, while larger in magnitude than the contemporary specification remains statistically indistinguishable from zero. Lagged GDP growth exhibits a positive coefficient significant at the 10 percent level, showing potential delayed demand pull effects that contrast with the negative contemporary relationship. This pattern may indicate complex temporal dynamics in the growth-inflation relationship with immediate supply enhancing effects giving way to subsequent demand pressures.

The substantial improvement in model fit with the R-squared increasing to 92% underscores the importance of dynamic specifications in capturing inflationary process. The strong role of inflationary inertia emerges as a dominant characteristic with past inflation explaining much of current inflation variation.

Structural Breaks and External Shocks

The sample period encompasses the unprecedented economic disruption caused by the COVID-19 pandemic, representing a potential structural break in economic relationships. To account for this exogenous shock the analysis incorporates a dummy variable identifying the post-2020 period. The estimation results presented in Table 4.5, reveal substantial impacts of this structural break.

Table 4.5: *Structural Break Model Incorporating COVID Impact*

Explanatory Variable	Coefficient Estimate	Standard Error	t-Statistic	Probability Value
Money Supply Growth	-0.039	0.158	-0.25	0.807
GDP Growth	-1.053	0.515	-2.04	0.054
Real Interest Rate	0.449	0.491	0.91	0.371
COVID Dummy	11.260	3.038	3.71	0.001
Constant Term	8.729	3.421	2.55	0.019
R-squared	0.567			
Adjusted R-squared	0.480			

The COVID dummy variable demonstrates a highly statistically significant coefficient of 11.260, indicating that the pandemic period was associated with an increase in inflation of approximately 11.26 percentage points, controlling for other factors. This substantial impact reflects the combined effects of global supply chain disruptions, domestic lockdown measures, fiscal responses, and subsequent recovery dynamics even after accounting for this structural break, money supply growth remains statistically insignificant with a coefficient of -0.039 that fails to achieve conventional significance levels. This persistence of monetary policy ineffectiveness across specifications strengthens the conclusion that money supply operations have limited systematic influence on inflation in Pakistan.

Robustness Checks and Alternative Specifications

To ensure the validity and reliability of the principal findings, several alternative model specifications and estimation techniques were employed. These robustness checks serve to verify whether the core results remain consistent across different methodological approaches. The results are summarized in Table 4.7 below.

Table 4.6 : *Summary of Robustness Check Results*

Specification Type	Money Supply Coefficient	GDP Growth Coefficient	Key Findings	R-squared
Baseline Bivariate Model	-0.194 (p > 0.05)	Not Applicable	Confirms direct but weak money inflation relationship	0.064
First Differences Specification	Statistically significant	Significant and Negative	Changes in money supply remain insignificant while GDP growth shows significant relationship with inflation	0.086
Multivariate Model with Controls	Statistically significant	Variable-specific	Confirms inflationary persistence as dominant characteristic with limited real interest rate influence	0.092

The robustness checks confirm three consistent patterns across all specifications: money supply growth demonstrates no statistically significant relationship with inflation; inflationary persistence emerges as a dominant characteristic; and real interest rates show limited systematic influence on price dynamics.

5. Conclusion and Recommendations

5.1 Conclusion

This research was undertaken to examine the nexus between money supply and inflation in Pakistan which is a relationship that is foundational to monetary policy but remains empirically contentious in developing economies. The study quantitatively analyzed the impact of broad money supply growth (M2) alongside control variables including GDP growth and the real interest rate on the inflation rate. The results reveal a paradox that is central to Pakistan's economic narrative: despite theoretical postulations, no statistically significant long run cointegrating relationship exists between money supply growth and inflation. In the short run the influence of money supply is equally elusive with coefficient estimates indicating that a one percentage point increase in money supply growth leads to a decrease in inflation of between **0.78** to **0.88** percentage points that is an effect which might be statistically insignificant. The inflation demonstrates inertia where a one percentage point increase in the previous year's inflation rate propagates a substantial 0.79 percentage point increase in current inflation highlighting the dominant role of inflationary expectations and adaptive behavior. The impact of real economic activity is nuanced; a one percentage point rise in contemporary GDP growth correlates with a significant 2.45 percentage point reduction in inflation by easing supply constraints, whereas its lagged value shows a potential positive effect. Most strikingly the real interest rate - a primary

tool of monetary policy exhibits no significant influence on inflation and the economy was subjected to a massive exogenous shock evidenced by the COVID-19 pandemic which single-handedly elevated the inflation rate by over 11 percentage points. The collective evidence demonstrates that inflation is not primarily a monetary phenomenon but is instead driven by a complex interplay of structural rigidities supply side shocks and powerful inertial forces that severely attenuate the conventional transmission mechanism from money to prices.

5.2 Policy Recommendations

Based on the conclusive finding that inflation in Pakistan is structurally rooted and resistant to conventional monetary remedies, a fundamental reorientation of the policy framework is urgently recommended. The State Bank of Pakistan should de-emphasize strict monetary targeting as the primary anchor for price stability and instead adopt a more eclectic and flexible policy framework that directly addresses the identified drivers of inflation. To break the pervasive cycle of inflationary inertia, the central bank must enhance its credibility through consistent and transparent communication of its inflation objectives actively, managing public expectations to prevent temporary price shocks from becoming entrenched. Fiscal and structural policies must be mobilized to play a co-equal role with monetary policy, specifically targeting supply side bottlenecks in critical sectors such as energy, agriculture, and transportation through strategic public investment and regulatory reforms that reduce the cost of production and distribution. Given the profound impact of external shocks as starkly illustrated by the COVID-19 episode, it is imperative to build economic resilience by establishing strategic commodity reserves diversifying import sources and developing social safety nets that can be rapidly deployed to shield vulnerable populations from sudden price surges. Ultimately, a holistic and coordinated approach where monetary discipline is complemented by proactive fiscal measures and decisive structural reforms is essential to successfully achieving durable price stability and fostering sustainable economic growth in Pakistan.

References

King, M. (1996). How should central banks reduce inflation? Conceptual issues. *Economic Review-Federal Reserve Bank of Kansas City*, *81*, 25-52.

Palley, T. I. (1994). Competing views of the money supply process: theory and evidence. *Metroeconomica*, *45*(1), 67-88.

Kumar, S., Ali, A., & Alam, M. (2025). Monetary Policy and Inflation Dynamics in Pakistan: Structural Barriers and The Limits of Policy Transmission. *Pakistan Journal of Social Science Review*, *4*(4), 270-292.

Khan, M. A., & Ahmed, A. (2011). Macroeconomic effects of global food and oil price shocks to the Pakistan economy: A structural vector autoregressive (SVAR) analysis. *The Pakistan Development Review*, 491-511.

Taylor, L. (1991). *Income distribution, inflation, and growth: lectures on structuralist macroeconomic theory*. Mit Press.

Dimand, R. W. (2019). *Irving Fisher*. Cham: Palgrave Macmillan.

Arestis, P. (2011). Keynesian economics and the New Consensus in macroeconomics. *A Modern Guide to Keynesian Macroeconomics and Economic Policies*, *88*, 111.

Spahn, P. (2009). The New Keynesian Microfoundation of Macroeconomics. *Review of Economics*, *60*(3), 181-203.

Chowdhury, I., Hoffmann, M., & Schabert, A. (2006). Inflation dynamics and the cost channel of monetary transmission. *European Economic Review*, *50*(4), 995-1016.

Ellingsen, T., & Söderström, U. (2001). Monetary policy and market interest rates. *American Economic Review*, *91*(5), 1594-1607.

Mishra, P., Montiel, P. J., & Spilimbergo, A. (2012). Monetary transmission in low-income countries:

effectiveness and policy implications. *IMF Economic Review*, *60*(2), 270-302.
Jácome, L. I. (2004). The late 1990s financial crisis in Ecuador: Institutional weaknesses, fiscal rigidities, and financial dollarization at work.
Mishkin, F. S., & Kiley, M. (2025). *The Evolution of Inflation Targeting from the 1990s to the 2020s: Developments and Challenges* (No. w33585). National Bureau of Economic Research.
Nersisyan, Y., & Wray, L. R. (2022). What's causing accelerating inflation: pandemic or policy response?. *Levy Economics Institute, Working Papers Series*, *1003*.
White, W. R. (2006). Is price stability enough?.
Bańbura, M., Bobeica, E., & Martínez Hernández, C. (2023). *What drives core inflation? The role of supply shocks* (No. 2875). ECB Working Paper.
Ali, S., Umar, M., & Khan, F. (2022). The dynamics of money supply, exchange rate, and inflation in Pakistan: A time series analysis. Journal of Asian Economics, 78, 101456.
Bilquees, F. (1988). Inflation in Pakistan: A monetarist versus structuralist approach. The Pakistan Development Review, 27(2), 109–130.
Denbel, F. S., Ayen, Y. W., & Regasa, T. A. (2016). The relationship between money supply and inflation in Ethiopia. Journal of Economics and Sustainable Development, 7(15), 66-74.
Friedman, M. (1963). Inflation: Causes and consequences. Asia Publishing House.
Husain, F. (2006). The exchange rate pass-through to inflation in Pakistan. State Bank of Pakistan Research Bulletin, 2(1), 1-16.
Imimole, B., & Enoma, A. (2011). Exchange rate depreciation and inflation in Nigeria (1986–2008). Journal of Business and Economics, 2(3), 175-185.
Jiranyakul, K. (2016). The relationship between monetary policy and inflation in Thailand: A PVAR approach. SSRN Electronic Journal. https://dx.doi.org/10.2139/ssrn.2752995
Khan, M. S., & Schimmelpfennig, A. (2006). Inflation in Pakistan: Money or wheat? International Monetary Fund Working Paper, WP/06/60.
Lim, Y. C., & Sek, S. K. (2015). An examination on the determinants of inflation. Journal of Economics, Business and Management, 3(7), 678-682.
Majumder, M. A. (2016). The dynamics of monetary policy transmission in Bangladesh. Bangladesh Bank Working Paper Series, WP No. 1604.
Malik, W. S., & Ahmed, A. M. (2020). The Phillips curve and inflation expectations in Pakistan: A reassessment. The Pakistan Development Review, 59(1), 1-22.
Narayan, P. K., Narayan, S., & Prasad, A. (2019). Evidence on the relationship between money supply and inflation in Fiji. Applied Economics, 51(55), 5967-5976.
Qayyum, A. (2006). Money, inflation, and growth in Pakistan. The Pakistan Development Review, 45(2), 203–212.
Stylianou, T., Tsioumas, V., & Papageorgiou, T. (2024). Monetary and structural drivers of inflation: A comparative panel analysis. Journal of Economic Studies, 51(1), 123-145.

Gumede, W., Bob, U., de Beer, D., Lues, R., & Anelich, L. (2020). Position paper: priority setting for interventions in pre-and post-pandemic management: the case of covid-19.
Mohanty, M. S., & Klau, M. (2001). What determines inflation in emerging market economies?. *BIS Papers*, *8*, 1-38.
Yaqoob, S., AL-Huqail, A. A., & Aziz, F. (Eds.). (2024). *Post-pandemic Economy, Technology, and Innovation: Global Outlook and Context*. CRC Press.
Falak, R., Rasool, F., Hussain, M. M., & Raza, M. A. (2024). Dynamics of Economic Policy Uncertainty and Exchange Rate: Evidence from Pakistan. *Bulletin of Business and Economics (BBE)*, *13*(2), 925-931.
Ghauri, S. P., Ahmed, R. R., Vveinhardt, J., Streimikiene, D., & Qureshi, K. S. (2019). The effects of

remittances on inflation (CPI and WPI) and exchange rate: A case of Pakistan. *Romanian journal of economic forecasting*, *22*(2), 146-165.
Ahmed, Z., Kadir, A., Alam, R., & Laskor, M. A. H. (2025). The impact of staple crop price instability and fragmented policy on food security and sustainable development: a case study from Bangladesh. *Discover Sustainability*, *6*(1), 79.
Munir, N. (2024). The Price of Progress: Understanding the Impact of Oil Shocks on Pakistan's Economic Trajectory. *Journal of Economic Sciences*, *3*(2), 199-212.
Stylianou, T., Nasir, R., & Waqas, M. (2024). The relationship between money supply and inflation in Pakistan. *Plos one*, *19*(3), e0301257.
Comin, D. A., Johnson, R. C., & Jones, C. J. (2023). *Supply chain constraints and inflation* (No. w31179). National Bureau of Economic Research.
KHAN, S. (2021). IMPACT OF EXCHANGE RATE MISALIGNMENT ON INFLATION AND ECONOMIC GROWTH: EVIDENCE FROM PAKISTAN.
Zeb, A., Shuhai, N., & Ullah, O. (2024). Inflationary dynamics under fiscal and monetary asymmetries: a nonlinear investigation in Pakistan. *SN Business & Economics*, *4*(12), 149.
Hanif, M. N. (2014). Monetary policy experience of Pakistan.
Bruno, M., & Easterly, W. (1996). Inflation and growth: in search of a stable relationship. *Review-Federal Reserve Bank of Saint Louis*, *78*, 139-146.