Impact of Inflation on Economic Growth of Nepal

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Abstract

This study investigates the impact of inflation on economic growth of Nepal over the period 1974/75 to 2022/23. Employing annual time series data and using the Autoregressive Distributed Lag (ARDL) bounds testing approach, the research explores both the short-run and long-run effects of inflation on real GDP growth. In addition to inflation, other macroeconomic variables such as real exchange rate, real broad money supply to GDP ratio, and trade openness are incorporated into the model. The results reveal a nonlinear and statistically significant relationship between inflation and economic growth, with evidence of a threshold effect. Moderate inflation appears to support economic activity, while inflation above the estimated threshold adversely affects growth. The study confirms the presence of a long-run cointegrating relationship among the variables and identifies inflation as a key determinant of growth dynamics in Nepal. These findings highlight the importance of maintaining inflation within a stable range to promote sustainable economic performance. The study provides useful insights for policymakers in designing inflation-targeting frameworks and macroeconomic strategies aligned with growth objectives.

Keywords: Inflation, RGDP, Real Exchange Rate Trade Openness and Broad Money Supply

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I. Introduction

The purpose of this study is to examine empirically the impact of inflation on economic growth of Nepal for the period of F/Y 1974/75 to 2022/23. A rise in an economy's ability to generate goods and services over a defined timeframe, relative to a previous period is defined as economic growth (Todaro & Smith, 2020). Economists consider the persistent and continuous rise in a country's overall price level as a key indicator of inflation (Mankiw, 2012). A moderate level of inflation may promote consumption and investment, fostering economic expansion. On the other hand, excessive and volatile inflation can adversely impact purchasing power and hinder savings (Fischer, 1993).

The relationship between inflation and economic growth remains uncertain and widely debated**.** Different studies using various data and methods have produced mixed findings. Some suggest **a** positive link, arguing that moderate inflation can boost growth, while others find a negative impact, showing that high inflation harms the economy. A key goal of macroeconomic policy is to boost economic growth while keeping inflation low. However, the relationship between inflation and growth has become a topic of significant debate in recent years (W. Madurapperuma, 2016).

It is widely acknowledged that maintaining low and stable inflation fosters economic growth, and the relationship may also operate in reverse. Scholars from the Structuralist and Keynesian traditions contend that inflation is not inherently

detrimental to economic performance. Conversely, proponents of the Monetarist school of thought argue that inflation adversely affects growth by imposing significant welfare losses. They emphasize three primary costs of unanticipated inflation. (i) redistributive effects that shift wealth from creditors to debtors, ii) heightened economic uncertainty that disrupts consumption, saving, borrowing, and investment decisions, iii) distortions in relative price structures, which undermine efficient resource allocation (Mubarik, 2005). The study of Tanzania between 1990-2011 concluded that the degree of responsiveness of GDP changes to fluctuations in general price levels was significant, indicating the impact of inflation on economic output (Kasidi, 1975).

Latin American countries experienced significant trade-offs between the 1950s and 1980s. While import substitution industrialization (ISI) strategies initially stimulated economic expansion, they also triggered increasing inflationary pressures. This inflation subsequently led to macroeconomic instability, thereby constraining sustained growth. The period highlights how the difficulties of controlling inflation and managing external debt obligations often undermined the otherwise positive effects of economic growth (Cardoso & Fishlow, 1992).

Since 1974, Nepal's inflation and economic growth have fluctuated due to internal and external factors. From 1974-1990, growth was slow (3-4%) with moderate inflation. Between 1990-2000, inflation rose due to political and global changes, while growth stayed modest. The 2000-2010 period saw higher inflation and low growth amid political turmoil. Recovery from 2010-2020 brought moderate growth and controlled inflation. However, the COVID-19 pandemic (2020-2023) caused economic contraction and high inflation (7.93% in 2022), with growth at 1.86%. Managing inflation alongside growth remains a key challenge for Nepal (Ministry of Finance, 2023). In recent years, Nepal has faced persistent inflation due to factors like global supply disruptions from the Russia-Ukraine conflict, rising domestic demand after COVID-19, higher transportation and food costs, and currency depreciation. This inflation poses challenges to macroeconomic stability and calls for deeper analysis of its impact on GDP and the economy (Nepal Rastra, 2024).

Nepal's economy is expected to grow moderately, but inflation remains a major concern. Although short-term inflation may ease, its long-term impact on investment, consumption, and trade risks economic stability amid a shrinking current account surplus and growing trade deficit.

Studies by Karki et al., (2020) and Paudel, (2022) found a unidirectional link from inflation to growth in Nepal, with inflation thresholds of 6% and 6.38% respectively. The Government aimed for 8% growth and 7% inflation in FY 2022/23 (NRB, 2022). These findings show that the inflation-growth relationship in Nepal is complex and shaped by structural and policy factors.

1.1 Objectives of the Study

The general objective of the study is to examine the impact of inflation on economic growth in Nepal. However, the specific objectives are as given below:

- To examine the relationship between inflation, real exchange rate, broad money supply and degree of trade openness and economic growth in Nepal
- To analyze the effect of inflation, real exchange rate, broad money supply and degree of trade openness on economic growth in Nepal.

II. Review of Literature

2.1 Theoretical Review

2.1.1 Mercantilism Concept: Mercantilism (16th–18th century) emphasized national wealth through gold accumulation, export promotion, and government intervention (Smith, 1752). Later, Smith criticized this view, arguing that real wealth comes from productivity and trade. The relationship between inflation and economic growth is debated. Some mercantilists believed inflation had no impact, but Hume, (1742) argued that gold inflows raise prices, reduce export competitiveness, and slow growth, suggesting a negative link between inflation and economic growth.

2.1.2 Classical Approach: Classical economics, developed by Adam Smith, David Ricardo, and John Stuart Mill, dominated from the late 18th to early 20th century. It stressed free markets, limited government, and self-regulating economies (Say, 2001). Smith (1776) "*The Wealth of Nations*" introduced the idea that economic growth is driven by productive resources: land, labor, and capital. Similarly, Classical economists believe that the economy tends to full employment in the long run, and this idea is central to their economic theory. Classical Quantity Theory of money reflects an increase in the money supply (with constant velocity and output) will directly lead to a proportional increase in the price level, causing inflation (Say, 2001).

2.1.3 Keynesian Concept: The Keynesian view sees a positive link between inflation and growth, especially when the economy is below full employment. Expansionary fiscal policies boost demand, leading to higher output and employment, which can raise prices. Though short-run effects may be delayed due to wage and price rigidity, moderate demand-driven inflation is seen as beneficial for growth in underperforming economies (Keynes, 1919). In the short run, the AD-AS model shows a positive link between inflation and output, as producers mistakenly see rising prices as specific to their goods and increase production. Keynesians argue this short-term misperception leads to higher output with rising prices (Snowdon, 2006).

2.1.4 Monetarist Concept: Friedman (1976) argued that inflation can reduce unemployment only in the short run, as workers mistake rising nominal wages for real gains. Once expectations adjust, unemployment returns to its natural rate, showing no long-run trade-off between inflation and unemployment. Monetarists, led by Friedman, focus on the long-run supply side and view money as neutral affecting only prices, not real variables like GDP or employment. According to the Quantity Theory of Money, inflation occurs when money supply growth exceeds economic growth. Thus, monetarism rejects the long-run Phillips Curve and sees inflation as having no lasting impact on growth.

2.2 Empirical Review:

Barro (1995) using data from around 100 countries (1960–1990), found that a 10% rise in inflation reduces per capita GDP growth by 0.2–0.3 points and the investment-to-GDP ratio by 0.4–0.6 points. The study shows a causal link between inflation, slower growth, and lower investment. Over 30 years, sustained inflation could reduce real GDP by 4–7%, highlighting the need for price stability.

Vinayagathasan (2013) studied 32 Asian countries (1980–2009) and found a nonlinear link between inflation and growth, with a threshold at 5.43%. Inflation below this level has no significant impact on growth, but above it, inflation harms growth. The study highlights the importance of keeping inflation below 5.43% for stable economic performance.

Bhar & Mallik (2010) used a multivariate EGARCH-M model for the U.S. and found that inflation uncertainty increases inflation and reduces output growth. Output growth uncertainty had no significant effect, while oil prices positively influenced inflation. The findings highlight the role of inflation uncertainty in shaping economic performance and policy.

The study made by Anik and Biplob, (2019) (1987–2017) examined the impact of interest rate, real exchange rate, money supply (M2), and trade openness on Bangladesh's economic growth using various econometric tests. Results show a long-run relationship from all variables to growth, and a short-run causal link from trade openness and M2 to economic growth.

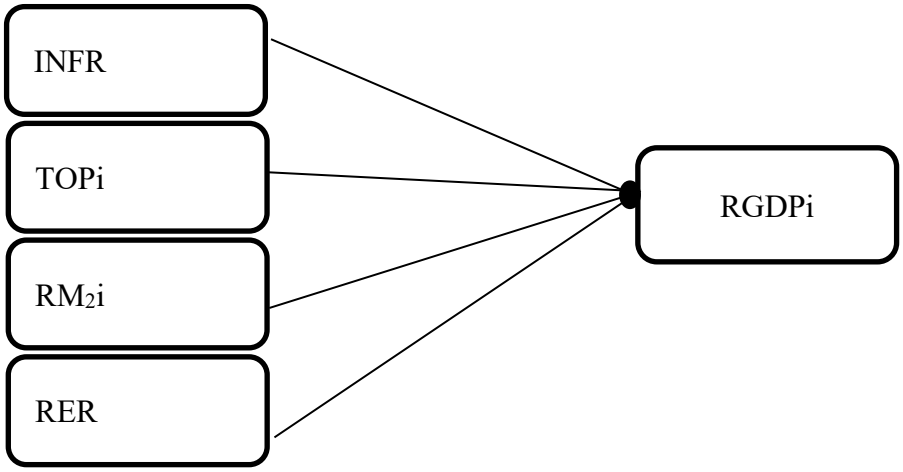
Karki et al., (2020) found that while low and stable inflation supports growth, high inflation harms it. A threshold of around 6% was identified, beyond which inflation negatively affects Nepal's economic growth. The study highlights the need for inflation-targeting policies to ensure sustainable development.

Using data from 1975 to 2010, the study of Bhusal and Silpakar (2005) estimated Nepal's optimal inflation rate at 6%, showing a nonlinear relationship where deviations harm growth. Granger causality tests found a weak inflation-growth link, attributed to Nepal's structural economic factors. The study highlights the need to maintain inflation near this threshold for stable growth.

Nepal Rastra Bank (2024) found a nonlinear inflation-growth relationship in Nepal, with a 6% threshold beyond which inflation harms growth. Moderate inflation aids activity, but high inflation reduces purchasing power and distorts investment. The 2022/23 Inflation Report noted 7.74% average inflation, driven by food, housing, and education, influenced strongly by Indian inflation. The study highlights the importance of maintaining inflation within an optimal range for stable growth.

2.3 Research Framework

Fig. 1



Note : Anik and Biplob (2019)

2.3.1 Definition of Variables:

a. Inflation Rate (INFR): Inflation rate measures the yearly percentage change in overall prices, reflecting changes in living costs and money's purchasing power. Usually tracked by the Consumer Price Index (CPI), moderate inflation indicates healthy demand, while very high inflation or deflation signals instability (Adaramola & Dada, 2020). This study uses inflation rate as the independent variable to assess its impact on Nepal's economic growth. It can be expressed as:

$$\text{INFR} = \left(\frac{\text{CPI in Current Year} - \text{CPI in Previous Year}}{\text{CPI in Previous Year}}\right) * 100$$

b. Real Gross Domestic Product Growth Rate (RGDPi): Real GDP Growth Rate shows the inflation-adjusted percentage increase in a country's economic output over time, reflecting true growth in goods and services produced (Adaramola & Dada, 2020). It can be expressed as:

$$\text{RGDPi} = \frac{RGDP(t) - RGDP(t-1)}{RGDP(t-1)}$$

c. Trade Openness (TOPi): Trade openness is measured by the trade-to-GDP ratio (exports + imports to real GDP), showing the importance of international trade in an economy. Adjusted for inflation, it reflects the true scale of trade over time and is used as an independent variable (Gräbner et al., 2021).It can be expressed as :

$$\text{TOPi} = \frac{Exports}{GDP} + \frac{Imports}{GDP}$$

d. Real Broad Money Supply (M_2) to Real GDP ratio (RM_2i): Broad Money Supply (M2) includes liquid and near-liquid assets, reflecting the monetary condition of an economy. The Real Broad Money to GDP Ratio (RM2i) shows the level of money relative to real output, indicating financial depth and liquidity (Friedman, 1968). It is used as an independent variable and can be expressed as:

$$RM_2i = \frac{\text{Real Broad Money Supply}}{\text{RGDP}} * 100$$

e. Real Exchange Rate (RER): It shows the true value of a country's currency in terms of purchasing power compared to another country's currency, after considering price differences. It tells us how many foreign goods we can buy in exchange for domestic goods. If the RER is high, it means local goods are expensive compared to foreign goods, which can hurt exports. But if the RER is low, domestic goods become cheaper and more attractive in international markets, boosting exports and improving trade competitiveness (Melitz & Obstfeld 2019). It is calculated on the basis of United States after adjusting the inflation and can be expressed as:

$$\text{RER} = \frac{E * P^*}{P}$$

2.4. Hypotheses:

Following hypothesis have been formulated in order to show the impact of inflation on economic growth for the study.

H_1: There is significant effect of INFR on RGDPi.

H_2 : There is significant effect of RER on RGDPi.

H_3 : There is significant effect of TOPi on RGDPi.

H_6 : There is significant effect of RM2i on RGDPi.

III. Research Methodology

This study adopts both descriptive and causal research designs, relying on secondary data and grounded in established economic theories related to the relationship between inflation and economic growth. From these theoretical foundations, hypotheses are formulated and empirically tested using data from Nepal. The objective is to validate or refute theoretical predictions through statistical analysis. The study's population includes all fiscal years for which macroeconomic data of Nepal are available, while the sample consists of 49 annual

observations from FY 1974/75 to FY 2022/23. It covers key variables such as inflation, real GDP growth, exchange rate, money supply, and trade openness. A purposive sampling technique is employed, selecting data based on availability and relevance for time series analysis. The study exclusively uses secondary data, collected from various research reports, journals, and bulletins available on the official websites of Nepal Rastra Bank, Ministry of Finance, the World Bank, and the International Monetary Fund.

3.1 Model Specification:

In order to examine the impact of inflation on economic growth of Nepal, the model for this study is formulated as below:

$RGDPi_t = f(INFR_t + RER + \beta_3 TOPi + RM2i)$ (1)

From equation (1), it can further be stated in more explicit form as follows:

$GDP_t = \alpha + \beta_1 IR_t + \beta_2 RER_t + \beta_3 M2_t + \beta_4 TOP_t + \varepsilon_t$ (2)

3.2 Estimation Techniques:

3.2.1 Unit Root Test:

To assess the stationarity of the variables, the study employed the ADF and Phillips-Perron unit root tests. These tests help determine whether a variable is stationary at level [I (0)] or after first differencing [I(1)] (Dickey & Fuller, 1979)

The general form of the ADF test is given by:

$\Delta Y_t = \alpha + \beta t + \gamma Y_{t-1} + \Sigma \delta_i \Delta Y_{t-i} + \varepsilon_t$ (3)

where:

- Y_t = Variable under test (e.g., RGDPi, INF, RER, TOPi, RM2i)
- α = Constant, βt = Trend term
- γ = Unit root coefficient
- δ_i = Lag difference coefficients
- ε_t = Error term

H_0: $\gamma = 0$ (non-stationary)

H_1: $\gamma < 0$ (stationary)

3.2.2 Correlation Analysis:

Correlation analysis is a statistical technique used to measure the strength and direction of the linear relationship between two quantitative variables. It quantifies how changes in one variable are associated with changes in another. The most common measure is the Pearson correlation coefficient (r), which ranges from –1 to +1 (Economics et al., 2013).

$$r = \frac{\Sigma[(X_i - \bar{X})(Y_i - \bar{Y})]}{\sqrt{[\Sigma(X_i - \bar{X})^2 \Sigma(Y_i - \bar{Y})^2}} \quad (4)$$

where,

x y and are the variables

$\bar{x}$ is the mean of x

$\bar{y}$ is the mean of y

Σ means summation over all data points

3.2.3 Autoregressive Distributed Lag:

The Autoregressive Distributed Lag (ARDL) model is an econometric approach used to examine both short-run and long-run relationships between variables in time series data. It is especially useful when the variables are not all integrated at the same level, some may be stationary at level (I(0)) while others may become stationary after first differencing (I(1)). The ARDL model includes both lagged values of the dependent variable (autoregressive terms) and lagged values of the independent variables (distributed lag terms), allowing it to capture complex dynamic relationships over time (Adaramola & Dada, 2020).

The general form of the ARDL model is:

$Y_t = \alpha + \Sigma \beta_i Y_{t-i} + \Sigma \gamma_j X_{t-j} + \varepsilon_t$ (5)

where:

Y_t is the dependent variable

X_t is the independent variable

β_i and δ_j are coefficients for lagged terms

ε_t is the error term.

3.2.4 Granger Causality Test

After estimating the ARDL model, the pairwise Granger causality test (Granger, 1988) was

applied to determine the direction of causality among variables, which ARDL alone cannot reveal. The test uses F-statistics and p-values to assess whether one variable predicts another.

Causality can be bidirectional (mutual influence), unidirectional (one-way influence), or nonexistent (no relationship) (Granger, 1988). The model's Granger causality equations are presented below.

$$Y_t = \alpha_0 + \Sigma\alpha_i Y_{t-i} + \Sigma\beta_i X_{t-i} + \varepsilon_t \quad (7)$$

where,

Y_t and X_t are the two variables under analysis (e.g., RGDPi, INF, RER, TOPi, RM2i)

α_0 is the intercept term

α_i and β_i are coefficients of lagged values

ε_t is the error term

H_0: X does not Granger-cause Y (no predictive power)

H_1: X Granger-causes Y (X provides statistically significant information about future Y).

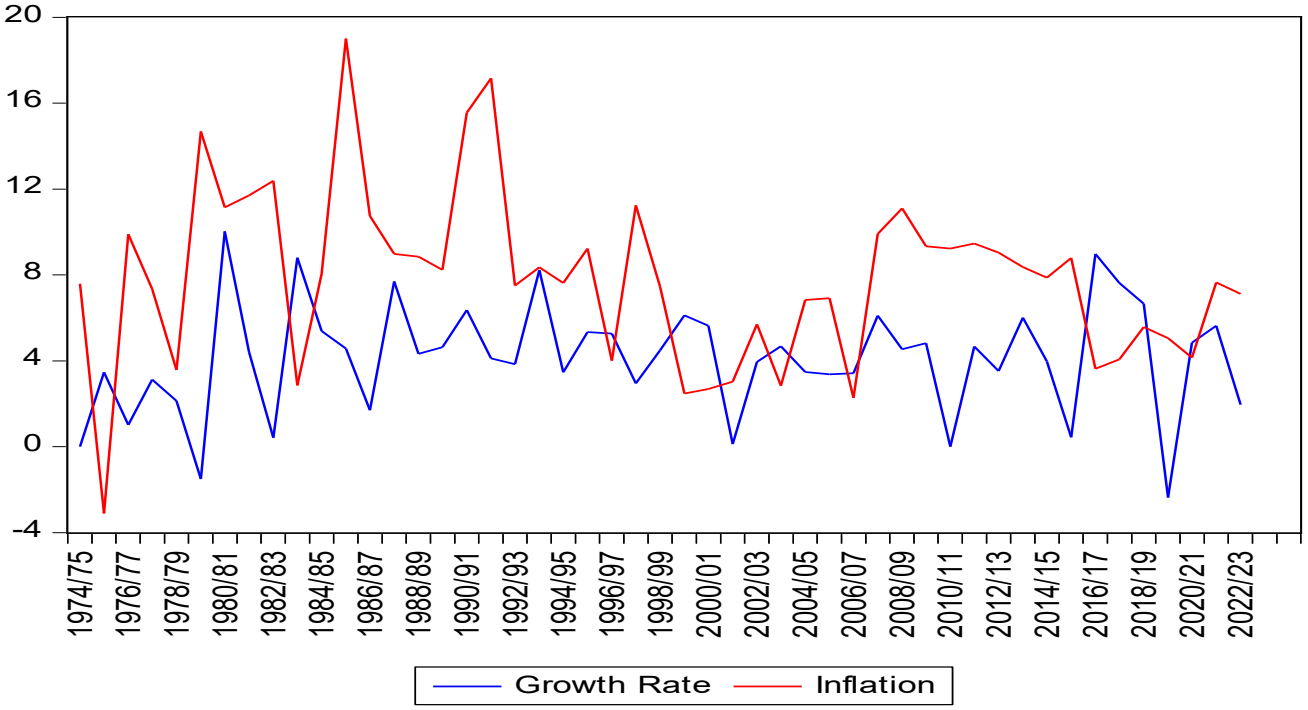
2.2.5 Diagnostic Test

To meet the key assumptions, the ARDL model must be free from serial correlation, heteroscedasticity, and should follow a normal distribution. Stability was checked using CUSUM and CUSUMSQ tests. Four diagnostic tests—normality, serial correlation (LM), heteroscedasticity, and CUSUM—were conducted to validate the model (Adaramola & Dada, 2020).were conducted to validate the model (Adaramola & Dada, 2020).

IV. Results and Discussion

4.1 Pattern *and trend of Economic Growth and Inflation Rate*

Fig. 2



Note: Appendix I

Figure 2 shows the trends of economic growth and inflation in Nepal from 1974/75 to 2022/23. In the early years, inflation was high and volatile compared to growth, with periods like 1979/80 and 1985/86 showing stagflation and instability. The 1990s saw relative stabilization, and both indicators moderated in the 2000s. A sharp divergence occurred in 2015/16 due to the earthquake and trade blockade, while 2016/17 saw high growth with low inflation. In recent years, particularly by

2022/23, both indicators have moved closer, reflecting post-pandemic challenges.

This section begins with descriptive statistics of the variable and is followed by analyzing inflationary trend in Nepal.

Table 1:

Descriptive Statistics

	RGDPi	INFR	d(RM2i)	d(RER)	d(TOPi)
Mean	4.215546	7.823034	2.864123	2.456039	0.005319
Median	4.447593	7.960775	2.044326	`2.750989	-0.000609
Maximum	10.03121	18.99895	18.07326	100.3725	0.417580
Minimum	2.370000	-3.113236	-7.713545	-48.99257	-0.359155
Std. Dev.	2.608252	4.114339	4.534125	24.85319	0.136124
Skewness	0.242368	0.259709	1.252286	0.985250	-0.168116
Kurtosis	3.241291	3.790855	6.073004	6.637666	4.406979
Jarque- Bera	0.586382	1.790494	31.43247	34.23096	4.185283
Probability	0.745880	0.408507	0.000000	0.000000	0.123361
Sum	202.3462	375.5057	137.4779	117.8899	0.255329
Sum Sq. Dev.	319.7401	795.6059	966.2396	29031.01	0.870899
Observations	48	48	48	48	48

Author's Calculation through E-Views 12

Table 1 presents summary statistics of the variables based on 48 observations. The average real GDP growth rate (RGDPi) is 4.22% with moderate variation (SD = 2.61) and is normally distributed. Inflation (INFR) averages 7.82%, shows moderate volatility (SD = 4.11), and also follows a normal distribution. The first difference of real money supply to GDP (d(RM2i)) has a high variability (SD = 4.53), is right-skewed (skewness = 1.25), leptokurtic (kurtosis = 6.07), and not normally distributed. The first difference of real exchange rate (d(RER)) shows extreme variability (SD = 24.85), is right-skewed (skewness = 0.99), highly peaked (kurtosis = 6.64), and also deviates from normality. Trade openness, d(lnTOPi)) has a near-zero mean (0.0053), low variability (SD = 0.1361), is nearly symmetric (skewness = –0.17), and approximately normally distributed.

Table 2

Unit Root Test Results Table (ADF)

Null Hypothesis: Variable has a unit root

		At Level				
		RGDPi	INFR	RM2i	lnTOPi	RER
With Constant	***Prob.***	***0.0000***	***0.0001***	***1.0000***	***0.4063***	***0.4182***
	t-Statistic	-8.2659	-5.2158	3.6988	-1.7377	-1.7133
		*	*			
With Trend & Constant	***Prob.***			***0.9836***	***0.5364***	***0.8949***
	t-Statistic			-0.4291	-2.0930	-1.2187
		At First Difference				
				d(RM2i)	d(lnTOPi)	d(RER)
With Constant	***Prob.***			***0.0000***	***0.0000***	***0.0000***
	t-Statistic			-5.6568	-7.9244	-9.5639
				*	*	*

Note: * indicates the Significant at the 1%; ** indicates Significant at the 5%

Author's Calculation through E-Views 12

The results from Table 2 show that RGDPi and INFR are stationary at level, since their p-values are 0.0000 and 0.0001, which are well below the 5% significance level. In contrast, RM2i, lnTOPi, and RER are not stationary at level, as their p-values are greater than 0.05. Even when a trend and constant are included in the test, these three variables still remain non-stationary.

After taking the first difference, all three previously non-stationary variables (RM2i, lnTOPi, and RER) became stationary, with p-values of 0.0000 and strongly negative t-statistics, confirming significance at the 1% level.

Table 3

Correlation Analysis

	RGDPi	INFR	d(RM2i)	d(RER)	d(lnTOPi)
RGDPi	1.000000	-0.106089	-0.287426	0.117526	0.320721
INFR		1.000000	-0.265305	0.090360	-0.064222
d(RM2i)			1.000000	-0.048565	-0.074611
d(RER)				1.000000	0.147349
d(lnTOPi)					1.000000

Note: Author's Calculation through E-Views 12

Table 3 shows weak to moderate correlations among the variables. RGDPi has a slight negative correlation with INFR (–0.1061) and d(RM2i) (–0.2874), and a moderate positive correlation with d(lnTOPi) (0.3207). INFR shows weak associations with other variables, while d(RM2i), d(RER), and d(lnTOPi) also display low correlations. All values are well within ±0.8, indicating no multicollinearity

and suitability for ARDL analysis.

Table 4

Lag Length Selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-540.935	NA*	14001.88*	23.73630*	23.93506*	23.81076*
1	-522.707	31.7001	18936.37	24.03075	25.22334	24.4775

Note: Author's Calculation through E-Views 12

Table 4 shows lag length selection based on criteria like AIC, SC, HQ, and FPE. Lag 0 is optimal, with the lowest values across all measures. Although log-likelihood improves at lag 1, the information criteria worsen, indicating lag 0 offers the best model fit with less complexity.

Table 5

ARDL result

Model	*F-statistic*	No. of Regressors (K)
f (INFR, dRM2i, dRER & dlnTOPi)	19.10694	4

Bounds test result

Significance	I (0) Bound	I (1) Bound
10%	3.03	4.06
5%	3.47	4.57
2.5%	3.89	5.07
1%	4.4	5.72

Note: Author's Calculation through E-Views 12

Table 5 shows the ARDL Bounds Test results, with an F-statistic of 19.1069 well above the upper critical values at all significance levels. This confirms a long-run cointegrating relationship between economic growth and the regressors, supporting further estimation of long-run coefficients and the ECM.

Table 6

Long-run Relationship

Variable	Coefficient	*t-Statistic*	Prob.
INFR	-0.057204	-0.718102	0.4768
d(RM2i)	-0.195937	-2.683903	0.0104
d(RER)	0.010998	0.893342	0.3769
d(lnTOPi)	5.437070	2.110404	0.0410

Short-run Relationship

Variable	Coefficient	*t-Statistic*	Prob.
C	4.694819	6.003510	0.0000
@TREND	0.052948	2.158731	0.0368
CointEq (-1)	-1.160644	-10.23988	0.0000

Note: Author's Calculation through E-Views 12

Table 7 presents the long-run coefficients from the ARDL model, showing the impact of key variables on Nepal's economic growth. Inflation (INFR) has a negative coefficient (–0.0572), but it is statistically insignificant (p = 0.4768), indicating no meaningful long-run effect on GDP. The first difference of the real money supply to GDP ratio (d(RM2i)) has a significant negative effect (–0.1959; p = 0.0104), suggesting that increased money supply may reduce growth due to inefficient resource allocation. The real exchange rate (d(RER)) shows a positive but insignificant relationship with GDP (0.0110; p = 0.3769). Trade openness (d(lnTOPi)) has a significant positive impact (5.4371; p = 0.0410), meaning increased openness promotes growth. The error correction term (CointEq(–1)) is –1.1606 and highly significant (p = 0.0000), confirming a stable long-run relationship and fast adjustment speed. About 116.06% of disequilibrium is corrected annually, showing strong short-run dynamics. The constant term (C = 4.6948; p = 0.0000) represents the baseline GDP level. Lastly, the positive and significant trend variable (@TREND = 0.0529; p = 0.0368) indicates steady long-term growth in Nepal's economy.

Table 8

Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
INFR does not Granger Cause RGDPi	48	0.90544	0.3464
RGDPi does not Granger Cause INFR		2.48530	0.1219
d(RM2) does not Granger Cause RGDPi	47	0.95799	0.3330
RGDPi does not Granger Cause d(RM2)		0.12343	0.7270
d(RER) does not Granger Cause RGDPi	47	0.28600	0.5955
RGDPi does not Granger Cause d(RER)		0.85603	0.3599
d(lnTOP) does not Granger Cause RGDPi	47	0.15625	0.6945
RGDPi does not Granger Cause d(lnTOP)		0.34774	0.5584
d(RM2) does not Granger Cause INFR	47	1.7E-05	0.9968
INFR does not Granger Cause d(RM2)		2.22499	0.1429
d(RER) does not Granger Cause INFR	47	4.03116	0.0508
INFR does not Granger Cause d(RER)		0.43620	0.5124
d(lnTOP)does not Granger Cause INFR	47	3.06263	0.0871
INFR does not Granger Cause d(lnTOP)		1.38825	0.2450
d(RER) does not Granger Cause d(RM2)	47	1.29143	0.2619
d(RM2) does not Granger Cause d(RER)		0.00216	0.9632
d(lnTOP)does not Granger Cause d(RM2)	47	1.36048	0.2497
d(RM2) does not Granger Cause d(lnTOP)		3.15515	0.0826
d(lnTOP) does not Granger Cause d(RER)	47	0.64563	0.4260
d(RER) does not Granger Cause d(lnTOP)		0.19925	0.6575

Note: Author's Calculation through E-Views 12

The Granger Causality Test shows no significant causal relationship between real GDP and other macroeconomic variables, as all p-values exceed the 5% level. Inflation does not Granger-cause RGDPi (p = 0.3464), nor does RGDPi cause inflation (p = 0.1219). Similarly, no causality exists between RGDPi and d(RM2), d(RER), or d(lnTOP). A marginally significant result is observed where d(RER) Granger-causes inflation (p = 0.0508), suggesting a weak link. Another borderline result is between d(RM2) and d(lnTOP) (p = 0.0826). Overall, the findings indicate limited or no strong predictive relationships among the variables.

Table 9

Residual Diagnostic Test

Jarque-Bera Normality Test

Statistics	Value	Probability
Jarque-Bera	0.338871	0.844141

Breusch-Godfrey Serial Correlation LM Test

Statistics	Values	Probability
F-statistic	0.226368	0.6368
Observed *R-squared	0.270113	0.6033

Breusch-Pagan-Godfrey Heteroscedasticity Test

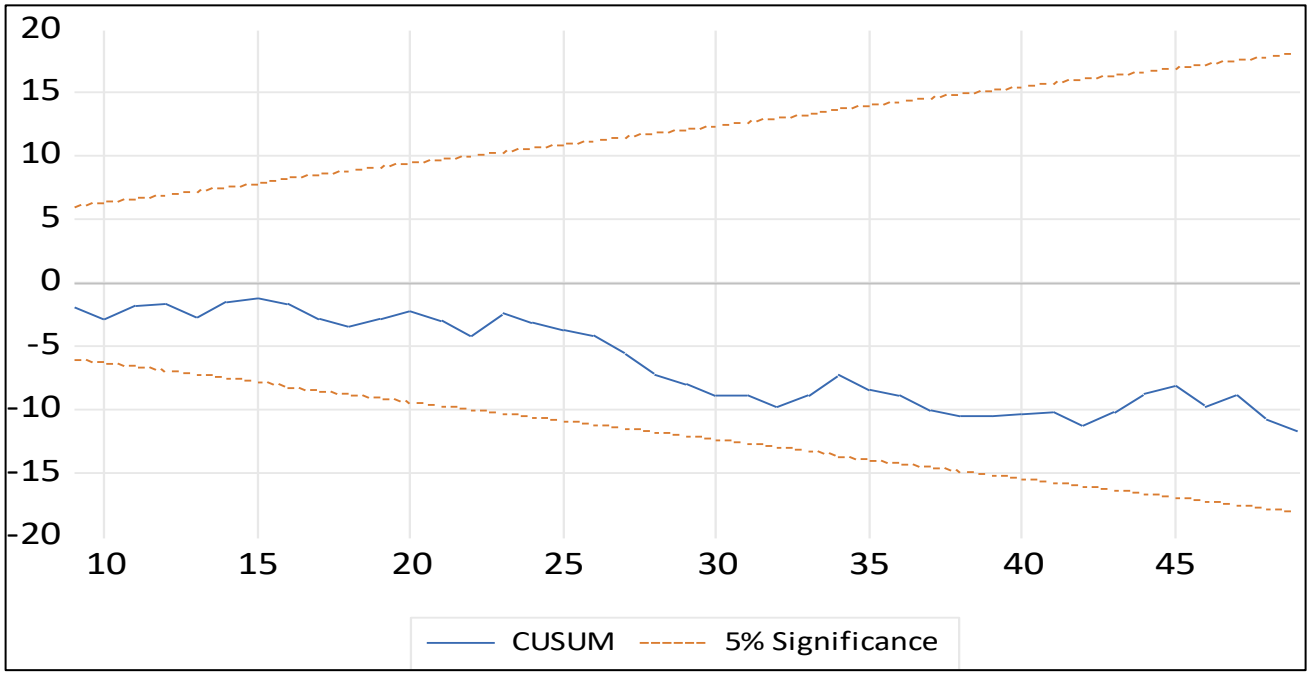
Statistics	Values	Probability
F-statistic	0.660764	0.6814
Observed *R-squared	4.232221	0.6453
Scaled explained SS	2.454978	0.8735

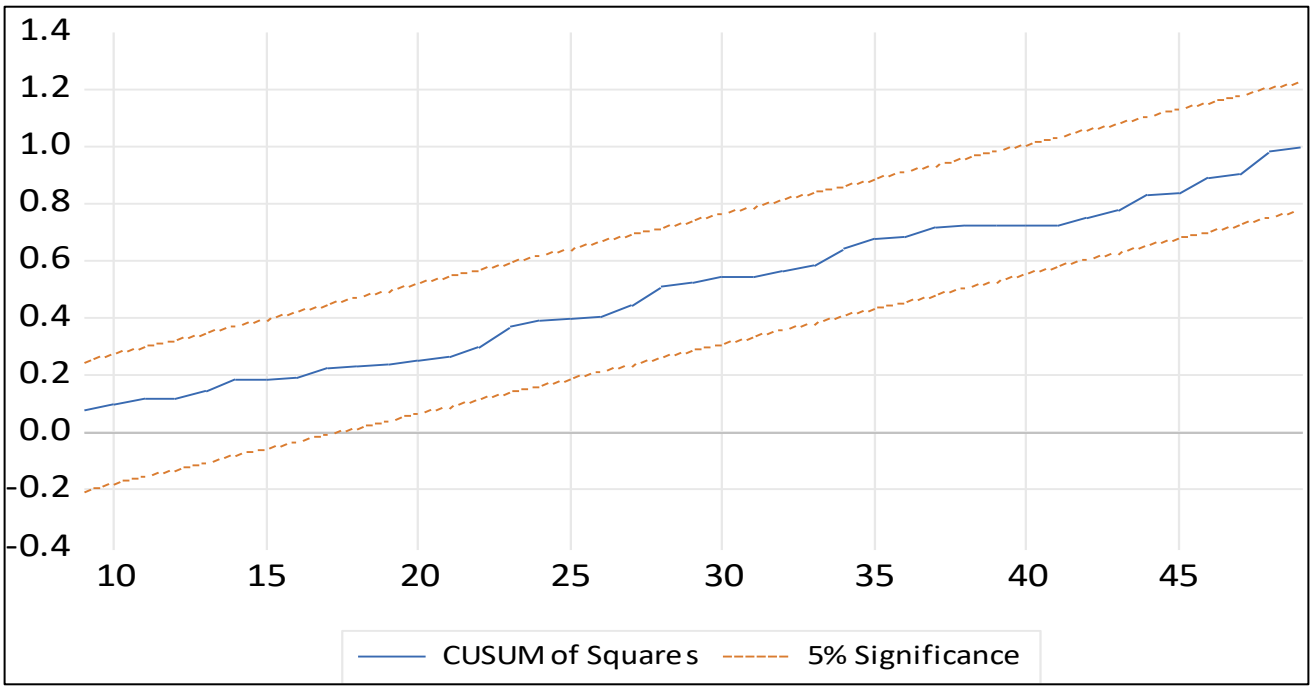
Note: Author's Calculation through E-Views 11

The Jarque-Bera test confirms that residuals are normally distributed ($p = 0.8441$), satisfying the normality assumption. The Breusch-Godfrey Serial Correlation LM Test shows no evidence of serial correlation (p = 0.6368 and 0.6033), indicating independent residuals. The Breusch-Pagan-Godfrey test confirms no heteroskedasticity, with all p-values above 0.05. Overall, the model meets key classical assumptions normality, no autocorrelation, and homoscedasticity ensuring reliable statistical inference.

Fig 3

CUSUM and CUSUMSQ Test





Note: Author's Calculation through E-Views 12

Figure 3 presents the results of the CUSUM and CUSUMSQ tests for parameter and variance stability of the ARDL model. The CUSUM line stays within the 5% critical bounds, indicating stable coefficients over time. Similarly, the CUSUMSQ line also remains within bounds, confirming stable residual variance. These results suggest that the model is structurally stable and suitable for reliable inference and forecasting.

In Nepal, the link between inflation and economic growth is still unclear. Some studies suggest low and stable inflation (below 6%) supports growth, while high inflation can harm it. There is evidence of a one-way causal relationship from inflation to growth. Overall, controlling inflation within a safe threshold is key for long-term economic stability and poverty reduction (Karki et al., 2020)**.** Using the STR model on data from 1976–2019, the study finds a non-linear relationship between inflation and growth, with an optimal inflation rate of 6.38 %. Inflation boosts growth below this threshold but harms it beyond that level. The findings highlight that moderate inflation supports growth, while high inflation slows it down (Paudel, 2022)**.** The study by Adaramola and Dada (2020) starts with descriptive statistics to check normality, followed by trend analysis of Nigeria's inflation (1980–2018). It uses the ADF unit root test to assess data properties before applying the ARDL co-integration test. Granger causality tests examine relationship directions, and diagnostic tests (serial correlation, heteroscedasticity, normality, and CUSUM) validate the results. Majumder (2016) examined the impact of inflation on economic growth in Bangladesh using data from 1975–2013. Co-integration and error correction models reveal a significant long-run positive relationship between inflation and GDP growth. Diagnostic tests confirm no serial correlation, no heteroskedasticity, and normally distributed residuals, ensuring reliable results.

Bhusal and Silpakar (2005) found a one-way positive relationship from inflation to economic growth in Nepal. With a threshold inflation rate

of 6%, growth may be harmed if inflation goes beyond this level. Thus, maintaining inflation around the threshold is key for long-term growth. The Nepal Rastra Bank should use expansionary policy below the threshold and contractionary policy if inflation exceeds it.

Nepal Rastra Bank (2017) results suggest a threshold inflation level in Nepal of around 6.25%–6.40%, though with wide confidence intervals indicating some uncertainty. This range aligns with earlier studies on developing countries. At this turning point, the estimated impact on growth is strong, at 4.59%.

I. Conclusions and Implications

This study analyzed the impact of inflation on economic growth in Nepal using data from FY 1974/75 to 2022/23. The ARDL bounds test confirmed a long-run relationship between inflation and GDP growth. However, the long-run coefficient of inflation was negative and statistically insignificant. Granger causality test showed no short-run causality from inflation to growth. This suggests inflation is not a direct or immediate driver of real output in Nepal. The error correction term was significant, indicating strong adjustment to long-run equilibrium. Inflation's influence on the economy appears gradual and limited. Macroeconomic policy should focus on keeping inflation within a stable threshold. Price stability is key for sustainable growth, investment, and purchasing power.

The study finds a statistically significant negative relationship between inflation and economic growth in Nepal over the long run, indicating that persistent inflation can reduce real output growth. This highlights the need for Nepal Rastra Bank to prioritize inflation control as a core aspect of macroeconomic policy to ensure long-term stability and development. On the other hand, trade openness has a significant positive impact on economic growth, suggesting that deeper integration into global markets can boost Nepal's economic progress. Therefore, policies promoting exports, improving trade infrastructure, and reducing trade barriers are essential. The study also reveals that real money supply and real exchange rate do not have a statistically significant effect on economic growth, implying that relying solely on these monetary tools may not effectively drive growth without broader financial and structural reforms. Moreover, the lack of short-run causality between inflation and growth suggests that the effects of inflation are more pronounced over time, and short-term interventions may not yield immediate results. Overall, the findings stress the importance of maintaining macroeconomic discipline, enhancing trade efficiency, and focusing on long-term strategies to achieve sustained economic growth in Nepal.

References

Adaramola, O. A., & Dada, O. (2020). Impact Of Inflation On Economic Growth: Evidence From Nigeria. *Investment Management And Financial Innovations*, *17*(2), 1–13. Https://Doi.Org/10.21511/Imfi.17(2).2020.01

Anik, T. H., & Biplob, N. K. (2019). *Economic Growth And Macroeconomic Fundamentals : Evidence From Bangladesh*. *September*.

Barro, R. J. (1995). Inflation And Economic Growth. *Annals Of Economics And Finance*, *14*(1), 121–144. Https://Doi.Org/10.1086/259360

Bhar, R., & Mallik, G. (2010). Inflation, Inflation Uncertainty And Output Growth In The USA. *Physica A: Statistical Mechanics And Its Applications*, *389*(23), 5503–5510. Https://Doi.Org/10.1016/J.Physa.2010.06.063

Bhusal T.P., & S. S. (2005). Inflation And

Growth : Estimation Of Threshold Point For. *Economic Journal Of Development Issues*, *13*(1), 1–15.

Cardoso, E., & Fishlow, A. (1992). Latin American Economic Development: 1950–1980. *Journal Of Latin American Studies*, *24*(S1), 197–218. Https://Doi.Org/10.1017/S0022216X00023841

Chandra Majumder, S. (2016). Inflation And Its Impacts On Economic Growth Of Bangladesh. *American Journal Of Marketing Research*, *2*(1), 17–26. Http://Www.Aiscience.Org/Journal/Ajmr http://Creativecommons.Org/Licenses/By-Nc/4.0/

Dickey, D. A., & Fuller, W. A. (1979). Distribution Of The Estimators For Autoregressive Time Series With A Unit Root. *Journal Of The American Statistical Association*, *74*(366), 427–431. Https://Doi.Org/10.1080/01621459.1979.10482531

Economics, E. O. F., Economics, P. O. F., Of, E., Issues, S., Economics, M., Economics, I., Economics, A., & Economics, U. (2013). Single-Equation Regression Models. In *Introductory Econometrics: A Practical Approach*.

Fischer, S. (1993). The Role Of Macroeconomic Factors In Growth. *Journal Of Monetary Economics*, *32*(3), 485–512. Https://Doi.Org/10.1016/0304-3932(93)90027-D

Friedman, M. (1968). The Role Of Monetary Policy. *The American Economic Review*, *LVIII*(March), 1–17. Https://Doi.Org/10.4324/9781912281091

Friedman, M. (1976). Inflation And Unemployment: The New Dimension Of Politics. In *The 1976 Alfred Nobel Memorial Lecture: Vol. Occasional* (Pp. 1–44).

Gräbner, C., Heimberger, P., Kapeller, J., & Springholz, F. (2021). Understanding Economic Openness: A Review Of Existing Measures. In *Review Of World Economics* (Vol. 157, Issue 1). Springer Berlin Heidelberg. Https://Doi.Org/10.1007/S10290-020-00391-1

Granger, C. W. J. (1988). Some Recent Development In A Concept Of Causality. *Journal Of Econometrics*, *39*(1–2), 199–211. Https://Doi.Org/10.1016/0304-4076(88)90045-0

Hume, D. (1742). ESSAYS , MORAL , POLITICAL , AND LITERARY. *Political Discourses*, *II*, 414.

Karki, S., Banjara, S., & Dumre, A. (2020). A Review On Impact Of Inflation On Economic Growth In Nepal. *Archives Of Agriculture And Environmental Science*, *5*(4), 576–582. Https://Doi.Org/10.26832/24566632.2020.0504022

KASIDI, F. (1975). IMPACT OF INFLATION ON ECONOMIC GROWTH: A CASE STUDY OF TANZANIA. *Nature*, *253*(5486), 11–12. Https://Doi.Org/10.1038/253011b0

Keynes, J. M. (1919). Keynes On Inflation. *The Economic Consequences Of The Peace*, 235–248. Http://Amzn.Com/B001KYF2NA

Mankiw, N. G. (2012). *Principles Of Economics 7th. Gregory*.

Ministry Of Finance, N. (2023). *Economic Survey Economic Survey 2022 / 23*.

Mubarik, Y. A. (2005). Threshold Level Of Inflation In Pakistan. *SBP-Research Bulletin*, *1*(1), 35–43.

Nepal Rastra, B. (2024). Inflation Report. In *Nepal Rastra Bank* (Vol. 11, Issue 1). Http://Scioteca.Caf.Com/Bitstream/Handle/123456789/1091/RED2017-Eng-

8ene.Pdf?Sequence=12&Isallowed=Y%0Ahttp://Dx.Doi.Org/10.1016/J.Regsciurbeco.2008.06.005%0Ahttps://Www.Researchgate.Net/Publication/305320484_SISTEM_PEMBETUNGAN_TERPUSAT_STRATEGI_MELESTARI

Nepal Rastra Bank, R. D. (2017). Optimal Inflation Rate For Nepal. *NRB Working Paper Series*, *29*(1), 1–18. Https://Doi.Org/10.3126/Nrber.V29i1.52519

NRB. (2022). Monetary Policy For 2022/23. *Nepal Rastra Bank*, *7*, 1–67. Www.Nrb.Org.Np

Paudel, H. (2022). Nonlinear Impact Of Inflation On Economic Growth In Nepal: A Smooth Transition Regression Analysis. *Nepal Public Policy Review*, *2*(1),1–26. Https://Doi.Org/10.1504/IJSE.2018.088624

Say, J. (2001). A Treatise On Political Economy; Or The Production, Distribution, And Consumption Of Wealth. *Botache Books*, 1–257. Https://Socialsciences.Mcmaster.Ca/~Econ/Ugcm/3ll3/Say/Treatise.Pdf

Smith, A. (1776). Wealth Of Nations. In *ELECTRONIC CLASSICS SERIES PUBLICATION*. Https://Doi.Org/10.2307/2221259

Smith, A. (1752). An Inquiry Into The Nature And Causes Of The Wealth Of Nations. *Political Discourses*, 1–414. Https://Doi.Org/10.2307/2221259

Snowdon, B. & E. E. (2006). Modern Macroeconomics: Its Origins, Development, And Current State. By Brian Snowdon And Howard R. Vane. Northampton, Mass.: Edward Elgar, 2005. *Quarterly Journal Of Austrian Economics*, *9*(1), 83–88.

Todaro, M. P., & Smith, S. C. (2020). Economic Development. Thirteenth Edition. In *Pearson* (Issue 13th Edition). Https://Www.Mkm.Ee/En/Objectives-Activities/Economic-Development

Vinayagathasan, T. (2013). Inflation And Economic Growth: A Dynamic Panel Threshold Analysis For Asian Economies. *Journal Of Asian Economics*, *26*, 31–41. Https://Doi.Org/10.1016/J.Asieco.2013.04.001

W. Madurapperuma, M. (2016). Impact Of Inflation On Economic Growth In Sri Lanka. *Journal Of World Economic Research*, *5*(1), 1. Https://Doi.Org/10.11648/J.Jwer.20160501.11

World Bank. (2025). Nepal Development Update. *International Bank For Reconstruction And Development*, *April*. Https://Doi.Org/10.1596/37315