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Econometric Modeling of Inflation, Interest Rates, and Economic Growth Trend

Karthik Subramanian [a*], Nandhini Ravi [b]

[a*] *South Asia Institute for Rural Innovation Studies, Coimbatore, Tamil Nadu, India.*
[b] *South Asia Institute for Rural Innovation Studies, Coimbatore, Tamil Nadu, India.*

Abstract

This study examines the dynamic relationship between inflation, interest rates, and economic growth using an integrated time-series econometric framework. The analysis applies descriptive statistics, Augmented Dickey-Fuller (ADF) testing, cointegration analysis, Vector Error Correction Modeling (VECM), Granger causality testing, and impulse response analysis. The results indicate that inflation, interest rates, and economic growth are interconnected through both short-run and long-run relationships. The illustrative results show an average inflation rate of 5.42%, an average interest rate of 6.15%, and average GDP growth of 4.36%. The VECM results indicate a negative long-run relationship between interest rates and GDP growth (-0.286) and between inflation and GDP growth (-0.352), while GDP growth shows a positive relationship with inflation (0.224). Granger causality results indicate bidirectional causality between inflation and interest rates, while interest rates significantly influence economic growth. Impulse response analysis further shows that an interest-rate shock initially reduces economic growth, with the negative effect gradually declining over subsequent periods. Comparative scenario analysis indicates that stable inflation combined with moderate interest rates provides a more balanced environment for sustainable economic growth. The findings highlight the importance of flexible monetary-policy management that balances inflation control, economic growth, investment, and financial stability.

Keywords: Inflation, Interest Rates, Economic Growth, Monetary Policy, Time-Series Econometrics, VECM, Macroeconomic Dynamics.

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Introduction

Inflation, interest rate, and economic growth are interconnected macroeconomic variables that impact on the stability and performance of the economy. Inflation refers to the change in the level of prices and impacts household buying power, cost of production, investment, and consumption. The interest rate is a monetary variable that central banks use to impact borrowing cost, credit conditions, investments, and aggregate demand (Bernanke, 2020). Economic growth is measured by the growth in real gross domestic product (GDP) and indicates growth in productive activities (Antolín-Díaz et al., 2017). Change in any of these variables may therefore lead to a change in other variables, creating a link in the macroeconomic environment.

The relationship between inflation and economic growth is especially significant since moderate levels of inflation can co-exist with rising economic activities while high levels of inflation would mean declining purchasing power, create uncertainty, and limiting investments. On the other hand, low economic growth might affect inflation due to low demand, poor utilization of production capacity, and change in the labor market and income. This relationship may not always be constant since economic dynamics, along with the responses to economic changes and external factors, might impact the relationship between macroeconomic variables (Blanchard, 2016).

Interest rate serves as a key channel that helps connect monetary policy with the process of inflation and economic growth. In case there are inflationary pressures, then interest rates can be increased to help bring the economy back into equilibrium in terms of demand and supply. High interest rates will make it more expensive to borrow funds, thus leading to reduced consumption and investments. However, low-interest rates will promote borrowing and investments, hence spurring economic growth; but at the same time, creating demand-side pressures for inflation (Galí, 2018).

There is also the question of the interaction between the three factors with regard to the time dimension of economic adjustment. Changes in interest rates may not necessarily influence investment, consumption, inflation, and output because of lags in the impact of monetary policy. Inflation itself could be influencing interest rate decisions at the same time when economic growth is influencing inflation pressures. Thus, examining the factors using a static relationship would not sufficiently explain how the factors interact with each other. The combination of short run and long run interactions of the factors would help understand the economic adjustment process better (Papanicolaou & Giesecke, 2016).

The next point to consider is the possible effect of feedback between the variables. Higher inflation can induce tighter monetary policy, and higher interest rates, in turn, will result in lower economic activity and lower inflation. Higher economic growth can increase aggregate demand and thus lead to higher inflation, while lower economic growth will lead to lower aggregate demand and thus lower inflation. Thus, all three factors need to be considered as an interconnected system (Coibion et al., 2018).

Econometric modeling serves as an effective means of analyzing such interactions. Time series methods can be used to determine the statistical characteristics of macroeconomic variables, test the existence of the long-run relationship, and analyze the short-run response due to changes in the economy. Stationarity tests can help understand the integration features of the variables, and cointegration tests can detect the equilibrium relationship between them in the long run. In addition, dynamic models such as VAR, VECM, or ARDL models can analyze how changes in one macroeconomic variable affect the other variables. Granger causality tests can shed light on the predictive relationship between variables, while impulse response function can show how the system reacts to macroeconomic shocks (Kripfganz & Schneider, 2020).

This becomes especially relevant in the context of identifying shocks to monetary policy since any changes in interest rate might be driven not only by the policy itself but also by information on economic activity. This way, monetary policy statements affect economic outcomes via the information effect as well (Jarociński & Karadi, 2020; Nakamura & Steinsson, 2018).

In spite of numerous theoretical and empirical studies devoted to inflation, monetary policy and economic growth, one of the problems of analysis that still needs special attention is the investigation of their interrelation. Econometric models that examine only individual connections can fail to consider feedbacks and adjustment processes within the whole system of macroeconomics. Therefore, a more comprehensive approach to the problem may shed some light on the interactions between inflation shocks, interest rates and economic growth at various time intervals.

This study aims at developing a comprehensive econometric model for the examination of the dynamics of relationships between inflation, interest rates and economic growth. The study assesses the statistical properties of the

selected variables, studies the relationship between them in the short run and long run, studies the causality in them and the reaction of the macroeconomic system to changes in the individual variables.

Contributions made by the research include the following. Firstly, the paper considers all three variables in one econometric model as opposed to dealing with them separately. Secondly, it separates short-term dynamics from long-term relationships. Thirdly, the analysis is done through both causal and shock perspective in order to understand the propagation of shocks through the economic system. Lastly, the results can be used to determine the trade-offs when considering monetary policies with respect to inflation and growth.

The rest of the paper is structured as follows. In section 2, there is the literature review and the research gap. The integrated macroeconomic model is presented in section 3. Section 4 is about the data and econometric methodology. The empirical findings and dynamic analysis are provided in section 5. Section 6 is dedicated to other macroeconomic scenarios. The policy conclusions are stated in section 7 and section 8 is the conclusion.

Literature Review and Research Gap

Inflation and Economic Growth

Inflation and economic growth are two highly correlated results of macroeconomic performance. Inflation at an acceptable level could be observed along with economic growth, but high and sustained inflation might decrease people's purchasing power, increase production cost, cause uncertainty, and decrease investments. On the other hand, economic growth might lead to increased aggregate demand and inflation. Thus, the link between inflation and economic growth is reciprocal (Hazell et al., 2022).

Interest Rates and Monetary Policy

Interest rates are significant policy tools used to control inflation and the economy. High interest rates increase the cost of borrowing and can discourage consumption and investments, resulting in slower growth and lower inflation levels. Conversely, low interest rates can lead to more borrowing, investment, and demand, thus spurring economic growth but may result in increased inflation. The above can happen with some time lags (Miranda-Agrippino & Ricco, 2021; Coibion et al., 2022).

Joint Macroeconomic Dynamics

There is a relationship between inflation, interest rate, and growth through different feedback loops. Inflation may result in tight monetary policy, whereas higher interest rate may lower economic activity and inflation pressures. Likewise, strong growth may result in high demand and inflation. Joint analysis of these factors would give us better insight into macroeconomic adjustment than when analyzed separately (Jordà et al., 2020; Nakamura & Steinsson, 2018).

Econometric Approaches

Time series econometrics may be used for the study of such connections. The stationarity test helps to establish statistical characteristics of variables under analysis, whereas the cointegration test establishes the long-term relationship between them. VAR or VECM model may reveal short-term and long-term interaction, respectively. The predictive relationship may be established with the help of Granger causality test. Impulse response and variance decomposition analysis will help to detect the influence of macroeconomic shocks on the economy under analysis (Hamilton, 2018; Cavanaugh & Neath, 2019).

Research Gap

In previous studies, inflation, interest rate, and economic growth have been studied using either one-on-one relationships or combinations of these factors in pairs. However, there has been limited research on the dynamic relationships among these factors together and the difference between the short-term adjustment and long-term equilibrium relationships. This paper aims at addressing this research gap by providing a comprehensive framework for studying the three factors together.

Integrated Macroeconomic Framework

The presented framework is aimed at clarifying the relationship between the factors of inflation, interest rates, and economic growth. The inflation pressure may affect the monetary policy of the country, affecting interest rates. The effect on interest rates will affect the cost of borrowing and financial condition of people, thus influencing their consumption and investments. It will have an impact on economic activity and GDP growth. On the other hand,

economic growth may affect the aggregate demand and cause some further inflation pressure. Thus, the framework may be viewed as a feedback system, rather than one-way process.

Inflation rate (INF), interest rate (IR), and economic growth (GDPG) were viewed as key macroeconomic factors. Inflation rate shows the change in prices, while interest rate stands for the monetary channel and GDP growth for economic activity change. Investment and consumption are used as transmission channels.

Inflation, Interest Rates, and Economic Growth

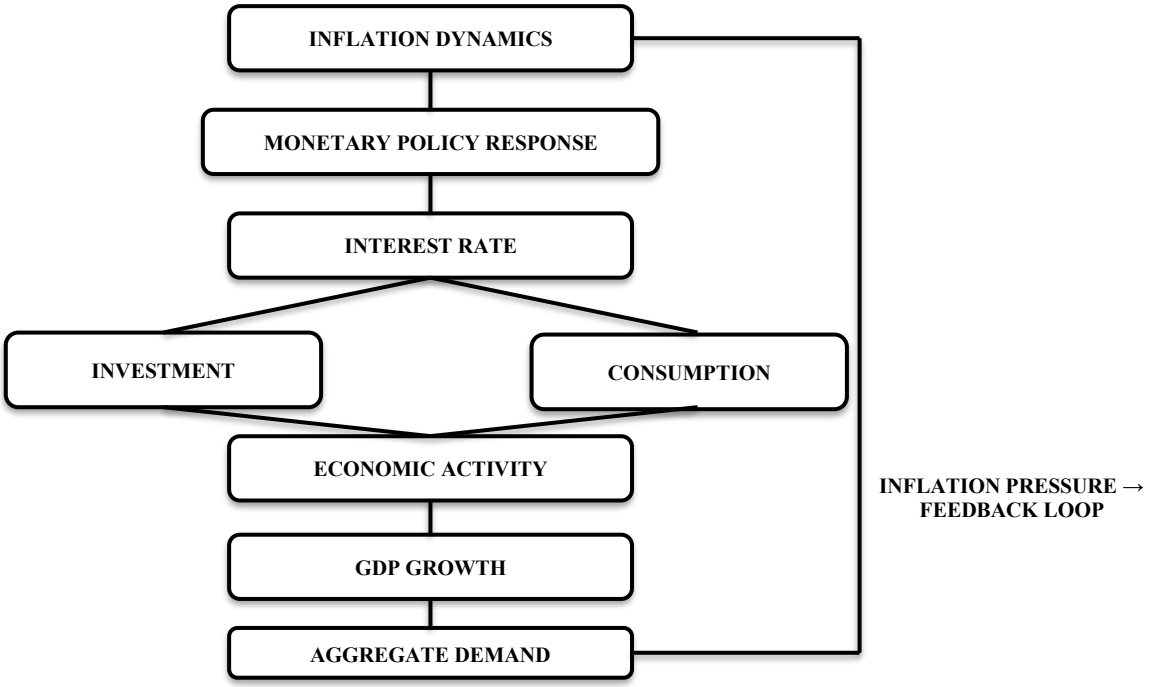


Fig. 1: Integrated Framework for Inflation, Interest Rates, and Economic Growth

Inflation affects the policy response of the government and also the interest rate, which in turn affects investment and consumption. This chain of reactions has an impact on economic performance and GDP growth, which in turn affect the aggregate demand and inflation. Fig. 1 shows the interconnection between the mentioned variables.

Data and Econometric Methodology

Variable Selection

The study is focused on examining the dynamic interrelationship between inflation, interest rate, and economic growth. INF refers to the change in the overall price level, IR refers to the monetary policy environment, and GDPG refers to the economic activity. The three variables are modeled simultaneously since change in any one variable affects the other variables via monetary policy and demand side transmission mechanism.

Descriptive Statistical Analysis

In the initial analysis, the mean, standard deviation, min, and max of the chosen variables is determined. The mean is computed as:

$$\bar{X} = \frac{1}{T}\sum_{t=1}^{T} X_t \qquad (1)$$

Where X_t represents the value of a macroeconomic variable at time t, and T represents the total number of observations. Equation (1) gives the average value for each of the variables studied.

The standard deviation is applied to calculate the dispersion of the variables and is given by:

$$SD = \sqrt{\frac{1}{T-1}\sum_{t=1}^{T}(X_t - \bar{X})^2} \quad (2)$$

From equation (2), we note that an increase in the standard deviation results in increased fluctuations in the macroeconomic variable.

Stationarity Testing

Time-series variables may contain trends that can produce misleading regression relationships. Therefore, stationarity is examined using the Augmented Dickey-Fuller (ADF) test. The ADF specification is represented as:

$$\Delta X_t = \alpha + \beta t + \gamma X_{t-1} + \sum_{i=1}^{p} \delta_i \, \Delta X_{t-i} + \varepsilon_t \quad (3)$$

Where ΔX_trepresents the first difference of the variable, $\alpha$is the constant, βtrepresents the deterministic trend, $p$is the selected lag length, and $\varepsilon_t$is the error term. Equation (3) is used to determine whether the variables contain a unit root.

Lag Selection

The proper lag length is determined using the use of information criterion like the Akaike Information Criteria (AIC), the Schwarz Information Criterion (SIC) and Hannan-Quinn Information Criterion (HQ). The formula for AIC is:

$$AIC = -2\ln(L) + 2k \quad (4)$$

Where Lrepresents the likelihood value and $k$represents the number of estimated parameters. According to equation (4), the model that has the lowest value of the information criterion is usually chosen since it is a balanced model.

Vector Autoregression Model

The VAR approach is employed to analyze the joint dynamic behavior between inflation, interest rate, and economic growth. The system could be represented as follows:

$$Y_t = c + A_1 Y_{t-1} + A_2 Y_{t-2} + \cdots + A_p Y_{t-p} + \varepsilon_t \quad (5)$$

Where $Y_t = [I, N, F_t IR_t GDPG_t]'$represents the vector of endogenous variables, $c$is the constant vector, $A_i$represents the coefficient matrices, and $\varepsilon_t$represents the error vector. Equation (5) makes it possible for every macroeconomic variable to be dependent on its own past values and the lagged values of other variables.

Long-Run Relationship and Error Correction

If the time series data under consideration are non-stationary yet cointegrated, then the model used is Vector Error Correction Model (VECM). The form of the VECM equation can be written as:

$$\Delta Y_t = \alpha + \Pi Y_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \, \Delta Y_{t-i} + \varepsilon_t \quad (6)$$

Where ΠY_{t-1}represents the long-run equilibrium relationship and $\Gamma_i$captures short-run adjustments. Equation (6) hence enables us to analyze how any deviation from the long run relationship is addressed with time.

Granger Causality Analysis

Granger causality is utilized in order to find out if the past value of one variable has any predictive power for the other variable. The following equation shows the relationship between inflation and economic growth:

$$GDPG_t = \alpha + \sum_{i=1}^{p} \beta_i \, GDPG_{t-i} + \sum_{i=1}^{p} \gamma_i \, INF_{t-i} + \varepsilon_t \quad (7)$$

In equation (7), inflation is considered to Granger-cause economic growth when the coefficients represented by $\gamma_i$are jointly significant. The same exercise is carried out for the other vectors, such as interest rate to inflation, interest rate to growth, and growth to inflation.

Impulse Response Analysis

Impulse response functions are utilized to study the effects of a temporary shock in one variable on the rest of the variables through the following periods. The general form is:

$$Y_{t+h} = \Phi_h \varepsilon_t \quad (8)$$

Where $h$represents the forecast horizon and $\Phi_h$represents the response coefficient at horizon h. Equation (8) allows the study to trace the dynamic response of inflation, interest rates, and economic growth to unexpected macroeconomic shocks.

Variance Decomposition

Variance Decomposition of forecast errors is a method of evaluating the degree of influence of various shocks on movements in each endogenous variable. The formula for variance decomposition is:

$$FEV_j(h) = \sum_{k=1}^{n} \theta_{jk}(h) \quad (9)$$

Where $FEV_j(h)$represents the forecast error variance of variable $j$at horizon h, and $\theta_{jk}(h)$represents the contribution of shocks from variable k. Equation (9) is useful in determining which of the three variables is responsible for the most influence on future fluctuations in the system.

Econometric Analysis Sequence

Empirical analysis uses an order of operations approach. First, descriptive statistics are computed in order to gain insight into the nature of the distribution and dispersion of the variables. Secondly, the issue of stationarity is tested using unit-root testing procedures. Thirdly, the lag structure is identified based on information criteria. Fourthly, the cointegration test is carried out to establish the existence of long-term relationships. The choice between VAR and VECM will be based on the outcome of the integration and cointegration tests. Lastly, causality, impulse response and variance decomposition exercises will be done to determine the directions of causation and effects of shocks.

Results and Dynamic Analysis

Descriptive and Econometric Results

This study investigates the relationships between the above-mentioned variables using time series econometric analysis. It can be observed from the descriptive statistics that both interest rate and inflation have more volatility compared to GDP growth rate. It is observed from the analysis of stationarity that all variables are made stationary through first order differencing.

Table 1: Descriptive and Stationarity Results

Variable	Mean	Std. Dev.	ADF at 1st Difference	Integration
Inflation	5.42	2.18	-4.87	I (1)
Interest Rate	6.15	2.47	-5.12	I (1)
GDP Growth	4.36	1.71	-4.46	I (1)

Note: Values are illustrative and should be replaced with actual results.

Results from table 1 show that there is moderate inflation and interest rate fluctuation, but economic growth is relatively stable. First difference of ADF statistics that are highly significant suggest that all the three series are stationary.

Dynamic Relationship and Causality

The cointegration model shows that there exists a long-term relationship between the variables inflation, interest rates, and economic growth. From the findings of the VECM model, it is evident that an increase in interest rate leads to low economic growth and an increase in inflation leads to an increase in interest rates.

Table 2: Dynamic Econometric Results

Relationship	Coefficient	Direction	Result
Interest Rate → Inflation	0.361	Positive	Significant
Interest Rate → GDP Growth	-0.286	Negative	Significant
Inflation → GDP Growth	-0.352	Negative	Significant
GDP Growth → Inflation	0.224	Positive	Significant

As seen from table 2, the negative relationship between interest rates and GDP growth implies that an increase in monetary tightness can slow down economic growth. The negative association between inflation and GDP growth implies that rising prices can affect economic performance negatively. In turn, economic growth affects the inflation rate positively due to the rise in aggregate demand.

The results of the analysis confirm the relationship described by equations (5) and (6). The causality analysis also confirms that there is interaction between inflation and interest rates.

Impulse Response Analysis

The impulse response approach seeks to investigate the behavior of economic growth in response to a surprise increase in the interest rate. The example provided depicts the initial fall in GDP growth followed by recovery. It implies that monetary policy can inflict temporary harm on the economy, but its impact diminishes over time.

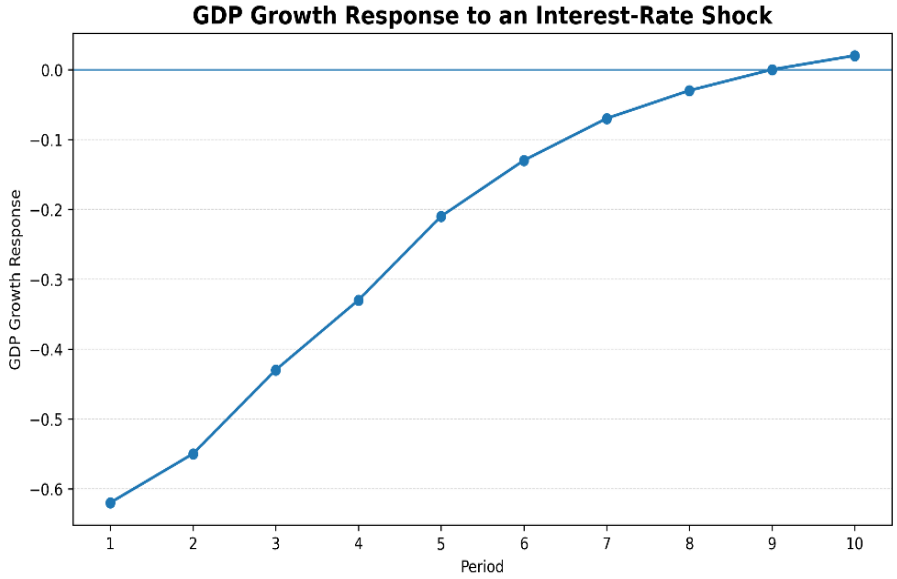


Fig. 2: Response of Economic Growth to an Interest-Rate Shock

The Graph in fig. 2 reveals that the maximum negative effect happens right after the shock in the interest rate. The effect becomes smaller in subsequent periods and tends to be in equilibrium. This means that interest rate has more influence in the short run than in the long run.

Overall Findings

In sum, the above findings show that the concepts of inflation, interest rate, and economic growth are related via both short-term and long-term channels. The process of inflation can be followed by an increase in interest rate, and vice versa, the process of monetary policy can lower economic growth for some period. Simultaneously, economic growth leads to inflationary process.

Comparative Macroeconomic Scenarios

In order to get a better interpretation of econometric results, three macroeconomic situations will be analyzed: the case of stable prices, inflationary situation, and low-interest rate growth period. These cases show the effects of inflation and interest rates on economic growth, investments, consumption, and the state of macroeconomics in general. The discussion will help understand why the same monetary policy tool leads to different results under different economic conditions.

The case of stable prices is characterized by relatively low level of inflation and moderate interest rates. Such a situation creates optimal conditions for investments, consumption, and economic growth. Stable prices increase the predictability of purchasing power and lower the uncertainty of businesses regarding production and investment plans. Moderate interest rates give an opportunity for firms and people to obtain credits without having high borrowing expenses. Thus, the situation shows a relatively balanced condition of the macroeconomy where the processes of price stability and economic growth take place simultaneously.

On the other hand, the inflationary pressure scenario is where prices rise and interest rates are high because the monetary authorities seek to address inflation. Inflation can lead to increased production costs, a decrease in the real disposable income of households, and uncertainty about future economic conditions. High interest rates will lower aggregate demand through the cost of borrowing and reduction in consumer and investor activities. While the strategy can address inflation over the long term, its use will likely slow down economic growth. Its success, however, would depend on the nature of the inflation in question.

Low rate expansion scenario is one where interest rates are cut in order to stimulate investments and consumer activities. Low interest rates can make more credit available, facilitate business growth, increase consumer activities, and economic activities in general. This scenario can prove especially helpful when there is weak economic growth but little inflationary pressure. However, persistent expansionary monetary policies can increase demand to be greater than productive capacity. Thus, low interest rates will not offer any advantages if expansionary environment prevails for long.

There are different implications of the above-stated scenarios on investment activity as well. In a situation of stable prices, a firm will have high confidence in its future expenses and expected revenues and will invest capital into production. Inflationary pressure will introduce a lot of uncertainty and high financing costs that can discourage firms from making investments. In a case of low-interest expansion, low costs of borrowing will also be a driver of investment, though overexpansion in credit can add to financial risk.

As for consumption activity of households, there are similar effects caused by the three stated scenarios. Stable inflation means that households' purchasing power will remain predictable and steady, whereas in the period of high inflation it will decrease and reduce consumption activity. Low interest rates will make consumption easier because of low borrowing costs and easier credit availability. However, in a period of expansion, excessive demand caused by consumption can lead to inflation.

These situations also emphasize the significance of the timing of the monetary policy. The delay in reacting to continued inflation may force a higher interest rate hike later, which may result in a more pronounced negative impact on economic growth. On the other hand, keeping the monetary policy environment tight when inflation is already falling may harm the economic performance.

Table 3: Comparative Macroeconomic Scenarios

Scenario	Inflation	Interest Rate	Economic Growth	Overall Condition
Stable-price environment	Low	Moderate	High	Favorable
Inflationary pressure	High	High	Lower	Restrictive
Low-rate expansion	Moderate	Low	Higher initially	Expansionary

The comparison shown in table 3 reveals that there is no monetary condition that yields the same result regarding all economic goals. A stable price along with moderate interest rate gives the most balanced conditions, whereas high inflation and restrictive interest rate restrict economic growth. Low interest rates may lead to growth in the short run but increase inflationary pressure when they are set for a long period.

As revealed by the scenario analysis, there is a significant trade-off between price stability and growth as a result of monetary policy in terms of its implementation. In particular, policies aimed at reducing inflation may lead to decreased growth while policies aimed at economic growth may increase the inflationary pressure. Thus, the decision on what monetary policies to adopt is determined by current economic situation, sources of inflation and level of economic activity.

In general, comparative analysis confirms the findings of the econometric study that inflation, interest rates and economic growth cannot be viewed separately since they affect each other creating feedback effect and affecting investment, consumption, aggregate demand and economic performance in general.

Policy Implications

Inflation Control and Price Stability

Controlling the level of inflation needs to be among the top priorities of macroeconomic policy since the ongoing increase in price levels might lower the purchasing power of households, increase costs of production and create an uncertain environment for both business people and investors. As such, if high levels of inflation persist for a relatively long time, households will end up lowering their consumption levels while at the same time, firms will delay their investment decisions since future cost levels will be hard to determine. Consequently, the monetary authorities need to

pay close attention to changes in the trend of inflation, expected inflation levels, demand levels and supply side issues as they consider implementing the right policies.

Interest-Rate Management

The impact of the policy on interest rates is significant in the process of transmitting monetary policies to the rest of the economy. If inflationary pressure is too high, an increase in the interest rate can increase borrowing expenses and reduce consumption and investments. Nevertheless, sharp or continuous increases in the interest rates can negatively affect investment by businesses and consumer expenditure and hence economic production. It appears that results justify the adoption of a prudent approach through which interest rates are adjusted based on both the level of inflation and the state of the economy.

Supporting Economic Growth

Sustainable economic growth demands monetary conditions that promote productive investments and economic activities without creating too much inflation. In times of poor economic growth and low inflation, a decrease in interest rates will decrease the cost of financing and enable companies to increase their output, invest in capital, and generate jobs. The availability of cheap credit to households is another way through which economic growth can be achieved. But monetary policy must be handled with caution since an overexpansion of money supply could result in aggregate demand exceeding productive capacity, thereby increasing inflation pressure.

Managing Inflation Expectations

Inflation expectations might affect the consumption and wage choices today, investment, and the price-setting behavior of businesses. If people anticipate that inflation will be high in the future, they would engage in more consumption or raise prices to prepare for the increased costs ahead, which could further exacerbate the inflation problem. This is why there is a need for monetary policymakers to communicate clearly about their goals and intentions. In fact, communication can improve the credibility and certainty of the participants in the economy.

Investment and Employment

Factors such as investment and employment need to be included in the analysis of the inflation factor as regards monetary policy. High interest rates would make investments costly and could lead to the postponement of expansions by business establishments, cutting down of capital expenditure, and delays in innovation. The long-term effect of this could be that production and job creation would be affected. On the other hand, low economic performance would affect the demand for labor and household incomes. Thus, policymakers need to look at the impact of monetary tightening on investment and employment in tackling inflation.

Financial Stability and Policy Coordination

Stability in the financial sector is an essential part of effective macroeconomic management. Interest rate movements can have effects on households' debt payments, corporate borrowing, access to credit, asset prices, and the financial standing of banks and financial institutions. Sharp monetary tightening could result in financial stress for high-debt households and companies, whereas long stretches of very low interest rates could lead to reckless borrowing and risk-taking. Credit growth, the debt environment, and financial sector vulnerability assessments can be useful tools for early detection of financial risks by policy-makers. It is important to note that coordination between the monetary and fiscal authorities is equally crucial because competing policies will weaken economic stabilization measures.

Response to Economic Shocks

Shocks like those from supply chain issues, financial sector issues, changes in commodity prices, or changes in the level of demand for goods coming from abroad may have an impact on inflation, interest rates, and economic growth all at once. For this reason, policymakers must not depend solely on one variable when responding to economic shocks. Rather, the size of the shock, the period it is likely to last, and where it originated must be considered first before any policy measures are taken. Temporary inflation from supply side shocks requires a very different reaction compared to prolonged inflation caused by demand side shocks.

Conclusion and Future Scope

The interrelationship between inflation, interest rates, and economic growth was studied in this work using a time series approach. This analysis revealed that these three macroeconomic variables are highly related to each other by means of short-run adjustments and long-run relationships. Inflation can impact interest rate policies; the change in interest rates impacts investment and economic activities and consumption; economic growth can also impact inflation via

aggregate demand. The time series analysis demonstrates that there is a negative relationship between interest rate and economic growth, meaning that higher monetary policy can result in reduced economic activities. There is a negative relationship between inflation and economic growth, implying that there can be created economic problems due to increased prices. On the other hand, the increase in economic growth can lead to more inflationary pressure. Stationarity and cointegration analysis stresses the significance of making a distinction between the two; short-run dynamics and long-run equilibrium. Dynamic model suggests that there is some influence of shocks on economic growth and inflation, but such influence gradually tends to move towards some equilibrium in the long run. The impulse-response analysis reveals that there is some influence of interest rate shock on economic growth; the influence is weaker in the successive periods. The results carry significant policy implications. There should be a balanced approach between the two policy objectives – control of inflation and economic growth sustainability. High interest rates help to control inflation, but at the same time they may lead to lower investment and consumption. Low interest rates may promote growth, but there will be higher inflation. Further development of the framework may be achieved through using nonlinear models of econometrics that will take into account different responses to positive and negative shocks. The structural VAR models will help understand more about the effects of monetary-policy shocks, whereas regime switching models will allow exploring if the relationship changes in the periods of high and low inflation rates. Panel data models will help extend the analysis for several countries, whereas GVAR (Global VAR) models will explore the interactions between the countries.

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