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Exploring causal nexus among inflation, interest rate and economic growth in India

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Abstract
The objective of this paper is to explore the causal nexus among inflation, interest rate and economic growth via GDP growth in India and also to judge impact of inflation, interest rate on economic growth via GDP growth in India using the annual data for the period, 1996-2024 which includes the 29 annual observations. This study uses ADF unit root tests, GMM regression, co integration test, vector error correction model and Granger causality test etc. The GMM method suggests that inflation has insignificant positive impact on GDP growth in India; interest rate has significant negative impact on GDP growth. The co integration test confirmed that GDP growth, inflation and interest rate in India are co integrated, indicating an existence of long run equilibrium relationship among them as confirmed by the Johansen co integration test results. The Granger causality test finally confirmed that there may have significant causal relationship between inflation and GDP; interest and GDP growth in unidirectional way which runs from inflation to GDP and from interest to GDP in India which is also supported by variance decomposition analysis (VDA). Quite similar results we find from the IRFs analysis which suggests that an impulse response function traces the effect of a one-time shock to one of the innovations on current and future values of the endogenous variables like GDP, interest and inflation.

Keywords: India, economic growth, inflation, interest, causality

Introduction

For societies wellbeing, every emerging economy like India is continually striving to achieve a sustained level of economic growth combined with low levels of Inflation and a reasonable level of Interest rate as one of the macro - economic objectives. In India's liberalized economic scenario, nexus among economic growth, inflation and interest rate are multifaceted and it has been acknowledged by scholars in this field that somehow, independent and interdependent relationship exists among these macro-economic indicators. The prickly or soft alteration of these three economic factors unswervingly influences societies and might cause social and economic troubles. Inflation and Interest rate are indispensable macroeconomic variables which are competent of converting and redirecting the growth blueprint of a country's economy (Babalola, O. Oladapo *et al*., 2015) [3].

High inflation typically compels the Reserve Bank of India (RBI) to elevate interest rates, which enhances borrowing costs, slows down patterns of investment and consumption expenditure, thus affecting economic growth of a country like India. On the contrary, stumpy inflation permits lesser interest rates, invigorating growth. Usually, elevated inflation operates as a hindrance for long-term growth, whereas restricted inflation and unwavering, modest interest rates promote persistent economic growth. Expectedly, there is a negative, long-run relationship between inflation and economic growth in India, predominantly when inflation exceeds a definite threshold. This is because of the fact that in times of rising inflation, the RBI elevates interest rates to restrain demand and calm down prices, which might be manifested as sluggish economic growth momentarily. Elevated interest rates normally have a negative impact on economic growth in India because it enhances the cost of capital for businesses and reduces consumption expenditure. Consequently, the association among these three economic indicators-GDP growth, inflation and interest rate is a "nexus" where all three variables are continually affecting each other, with towering inflation frequently creating a call for for restraining policies that thwart economic growth.

In view of the above prelude, the objective of this paper is to explore the causal nexus among inflation, interest rate and economic growth via GDP growth in India and also to judge impact of inflation, interest rate on economic growth via GDP growth in India using the annual data for the period, 1996-2024 which includes the 29 annual observations.

Literature review

Although a notable number of literature on the nexus among GDP growth, inflation and interest rate is available in the literature, study on Indian context regarding the issue is scanty. This segment reviews a number of of the key studies from diverse countries whilst bestowing unique concentration to work done on Indian context.

Prasanna and Gopakumar (2010) [10] demonstrate that if explicit output rises above prospective output, this will generate an upward stress on wages in the labor market. Higher wages, in turn, will guide to higher production costs and therefore higher prices.Chimobi (2010) examined on Nigerian economy for the period from 1970-71 to 2005-06 and observed no long-run association between inflation and growth rate. Udoka and Roland (2012) [12] suggests that interest rate is one of the determinants of economic growth and concluded that though interest rate is a marker of economic growth, a boost in interest rate does not have a noteworthy effect on the expansion of a country in the long run.Saymeh and Orabi (2013) [11] investigated the impact of interest rate, inflation and GDP on macroeconomic

development of Jordan for the period 2000-2010. The result suggests that a long-term equilibrium connection existed among variables. Conversely, regression results demonstrated that inflation has noteworthy consequence on growth rate whereas only existing interest rate has momentous control on growth rate. Renu Tanwar (2014), based on Indian economy from 1981-2004, observed that the growth of the economy is not connected to inflation, stepping up of growth should be focused forever as one of the leading economic objectives of the country. Kaur (2014) [10] found that inflation usually had a negative effect of India's growth over time. Mohseni and Jouzaryan (2016) investigated the consequence of inflation and unemployment on economic growth in Iran during the 1996–2012 period, and observed that inflation and unemployment have a momentous blow on economic growth in Iran. Behera and Mishra (2017) [4] found that inflation above approximately 4 percent may begin to damage growth in India and using spline regression or ARDL, they argued that this brink is significant for policy decisions.

Bhasin, Das and Lahiri (2022) [5] observed the Reserve Bank of India's forecasts for household inflation. They find out an important and continuing predisposition in overall household prospect that persists even after IT adoption. Although the confirmation for anchoring is feeble, it suggests that inflation will be superior than the certified objective. Alex (2025) [1] examines India's monetary policy standpoint across two distinct monetary regimes, incorporating the impact of COVID-19 into his analysis. According to them, the Reserve Bank of India's monetary policy, pre-inflation targeting, was less systematic and credible than it is today. Akshaya *et al.,* (2025) [2] utilized the vector error correction model (VECM) to examine the connection between policy uncertainties and India's inflation rate from April 2004 to March 2024 in India and observed that the money supply is positively connected with inflation, whilst the exchange rate is negatively associated. The money supply and changes in exchange rates are principally overseen by the central bank.

Form the above discuss, it has been found that above studies propose assorted results, some demonstrate inflation serving growth, others explain that it decreases growth and many found no apparent association. These differences are quite expected because countries diverge extensively in their economic pretext and developmental goals. In India, the substantiation on the inflation-growth affiliation is predominantly varied, some studies show a positive association, others a negative one, and some find no relationship at all. In view of this, this endeavor attempts a novel analysis on the nexus among economic growth, inflation and interest rate for India, using restructured data from 1996 to 2024.

Methodology

All necessary data for the sample period are obtained World Bank data base. All the variables are taken in their natural logarithms to reduce the problems of heteroscedasticity to maximum possible extent. GDP growth in natural logarithmic form has been proxied as economic growth in India which is a prevailing traditional practice in India.

The entire estimation procedure consists of three steps: first, unit root test; second, diagnostic test like Breusch-Godfrey Serial Correlation LM Test, Breusch-Pagan-Godfrey Heteroskedasticity Test to establish the power of the results in terms robustness, biasness and efficiency of the estimates, Regression analysis by Generalized Method of Moments, and Johansen cointegration test for long run association; third, ganger causality estimation to assess short run causality and Vector Error Correction Model (VECM) for assessing the short-run deviation from equilibrium towards their equilibrium level in the coming periods. Finally Variance Decomposition Approach and Impulse Response Function test have been applied. Interest rate on central and state government dated securities (weighted average) has been taken as interest rate in the current study and finally CPI index (annual %) has been proxied for inflation.

Analysis of results

Fig: 1 suggests the interplay of GDP growth, inflation and interest rate where interplay between interest rate and inflation is more prominent and explicitly shows negative relation between interest rate and GDP growth as was later on apparent from regression analysis.

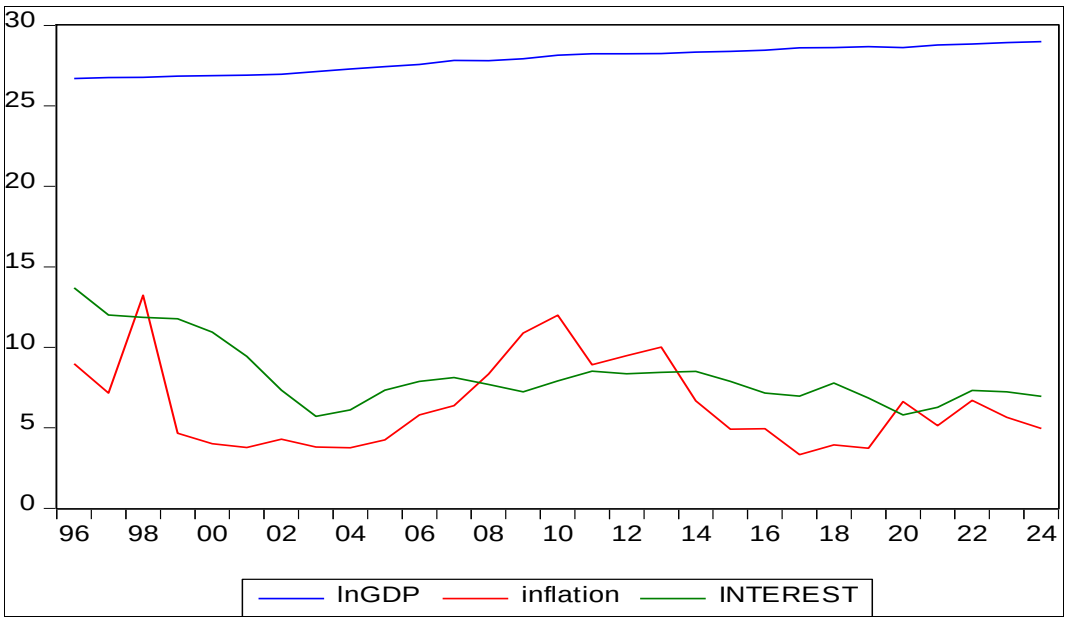

Fig 1: Graphical presentation of GDP growth, Inflation and Interest rate, 1996-2024

The following table-1 presents the Residual Test like Breusch-Godfrey Serial Correlation LM Test, Heteroskedasticity Test by Breusch-Pagan-Godfrey before employing regression technique. The test regression used to carry out the test is reported the statistics. The Obs*R-squared statistic is the Breusch-Godfrey LM test statistic. The statistic labeled "Obs*R-squared" is the LM test statistic for the null hypothesis of no serial correlation.

Table 1: Residual Test

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	41.03388	Probability	0.0000
Obs*R-squared	22.43816	Probability	0.0000
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	5.334403	Prob. F(2,26)	0.0114
Obs*R-squared	8.437563	Prob. Chi-Square(2)	0.0147
Scaled explained SS	5.379497	Prob. Chi-Square(2)	0.0679

Source: Author's own estimate

The (effectively) zero probability value corresponding to 'Obs*R-squared' powerfully indicates the presence of serial correlation in the residuals. Similarly, on the otherhand, the Breusch-Pagan-Godfrey test results strongly suggest the presence of heteroskedasticity in the residuals as probability corresponding to Obs*R-squared is zero or near zero.

In presence of serial correlation and heteroscadasticity, Newey West HAC consistent covariance matrix estimator (this model is useful in situations where the standard assumptions of regression analysis do not appear be valid) is more efficient than OLS technique unless the sample is large. Newey and West (1987b) propose a covariance estimator that is consistent in the existence of both heteroskedasticity and autocorrelation (HAC) of unknown form, under the assumption that the autocorrelations between distant observations die out. NW advocate using kernel methods to form an estimate of the long-run variance, $E(X'\varepsilon'\varepsilon' X/T)$.

Table 2 present the results of the unit root test. The results show that all variables in our study attain stationary at first difference, I(1), using ADF test. The results indicate that the null hypothesis of a unit root can be rejected for the all given variables as all the ADF statistic value are smaller than the critical t-value at 1%, 5% and 10%level of significance for all variables and, hence, one can conclude that the variables under consideration attained stationary at their first difference, I(1) in ADF test.

Table 2: Unit Root test

Variable Name	**ADF TEST**		
	Level	**P Value**	**Conclusion**
LNGDI	-4.879250	0.0006	I(1)
Inflation	-7.164391	0.0000	I(1)
Interest	-4.136829	0.0037	I(1)
Critical value	1% level	-3.699871	
	5% level	-2.976263	
	10% level	-2.627420	

Source: Source: Author's own estimate

According to the table-3, inflation has insignificant positive impact on GDP growth in India. This major finding of the study suggests that restrained inflation encourages flow of investment and country's production, at the same time, it diminishes consumers' purchasing power and pattern of consumption. The effect is frequently trivial owing to wage-price discrepancy in the informal sector and augmented production costs, balancing out the growth benefits.

Table 3: Regression result by Generalized Method of Moments (GMM)

Independent variables	**Dependent variable:** LNGDP **Method:** Generalized Method of Moments **Sample:** 1996- 2024 **Included observations:** 29 **Estimation weighting matrix:** HAC (Bartlett kernel, Newey-West Fixed Band width=4.0000)			
	Coefficient	**SE**	**t ratio**	**Prob.**
C	29.82190	0.848388	35.15126	0.0000
Inflation	0.047848	0.049658	0.963535	0.3442
Interest	-0.271130	0.054971	-4.932252	0.0000
R-squared	0.440584	Mean dependent var	27.89334	
Adjusted R-squared	0.397552	S.D. dependent var	0.768568	
S.E. of regression	0.596544	Sum squared resid	9.252473	
Durbin-Watson stat	0.253486	J-statistic	2.24E-44	

Source: Authors' own estimate

On the other hand, interest rate has significant negative impact on GDP growth. This might be because of the fact that high interest rates, largely hiked by the RBI to administer inflation, pessimistically affect India's GDP growth by escalating borrowing costs, that restrains corporate investment. Elevated interest rates also decrease consumers' spending on loans like home loan, auto loans and can instigate worsen foreign investment inflows.

Having established the time series properties of the data, the test for presence of long-run relationship between the variables using the Johansen and Juselius (1992) [7] LR statistic for cointegration was conducted. The crucial approach which is used in this study to test cointegration is called the Johansen cointegration approach. The Johanson approach can determine the number of cointegrated vectors for any given number of non-stationary variables of the same order. The results of Trace value and Maximum Eigen value statistic reported in table (4) suggest that the null hypothesis of no cointegrating vectors can be rejected at the 1% level of significance. It can be seen from the Likelihood Ratio (L.R.) of Trace value that we have three co-integration equations and maximum eigen value suggests two cointegrating equation. In other words, there exist linear combinations of the variables indicating long run co integrating relations among observed variables.

Table 4: Johansen Cointegra**tion Tests:**

Hypothesized No. of CE (s)	Eigen value	Likelihood Ratio	5% critical value	1% critical value
Unrestricted Cointegration Rank Test (Trace)				
None *	0.701922	48.98104	29.79707	0.0001
At most 1 *	0.388778	17.51060	15.49471	0.0245
At most 2 *	0.165722	4.710911	3.841466	0.0300
Trace test indicates 3 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
None *	0.701922	31.47044	21.13162	0.0013
At most 1	0.388778	12.79969	14.26460	0.0841
At most 2 *	0.165722	4.710911	3.841466	0.0300
Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **MacKinnon-Haug-Michelis (1999) p-values				

Ho: has no co-integration; **H_1:** has co-integration
Source: Author's own estimate

Estimating the long-run relationship, the results are contained in table-4 which shows positive relationship between economic growth via GDP growth and interest rate. Precisely, 1% increase in interest raises the level of GDP growth by 0.67%.Therefore, the normalized co integration equation reveals that there is a positive relationship between economic growth (LNGDP) and interest rate and negative relations between inflation and GDP growth. Looking at the results, the normalized cointegrating equation reveals that in the long-run, interest rate affects GDP growth positively and inflation affects GDP growth negatively in India.
Based on the results of the granger causality test statistic as well as its p-values, we conclude that there may have significant causal relationship between inflation and GDP ; interest and GDP in unidirectional way which runs from inflation to GDP and from interest to GDP in India.

Table 5: Normalized cointegrating coefficients (standard error in parentheses)

LNGDP	Inflation	Interest
1.000000	-0.024060	0.668117
	(0.04971)	(0.07467)

Source: Authors' own computation;*Figure in the parenthesis indicates S.E.

Table 6: Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.	Decision	Results	Direction of Causality
Inflation does not Granger Cause LNGDP	27	3.32958	0.0445	Reject null at 5% level	$INFLATION \Rightarrow GDP$	Unidirectional causality
LNGDP does not Granger Cause Inflation		0.12465	0.8834	Did not reject	$GDP \not\Rightarrow INFLATION$	No causality
Interest does not Granger Cause LNGDP	27	7.70828	0.0029	Reject null at 5% level	$INTEREST \Rightarrow GDP$	Unidirectional causality
LNGDP does not Granger Cause Interest		0.92058	0.4131	Did not reject	$GDP \not\Rightarrow INFLATION$	No causality
Interest does not Granger Cause Inflation	27	0.33231	0.7208	Did not reject	$INTEREST \not\Rightarrow INFLATION$	No causality
Inflation does not Granger Cause Interest		2.27903	0.1260	Did not reject	$INFLATION \not\Rightarrow INTEREST$	No causality

H0: X does not Granger causeY; **H1:** X Granger causes Y
Source: Source: Author's own estimate

Therefore, we have found that unidirectional causality exists between INFLATION and GDP and interest and GDP in India because we are compelled to reject null hypothesis-inflation does not granger cause LNGDP and interest does not granger cause LNGDP.

Column in the Table 7 below shows the cointegration eq explaining the breakdown of Error Correction Term (ECT) that signifies the long-run relationship among the variables. The equation of ECT term can be written as follow according to the result presented by the VECM:

$$\pi_{t-1} = 1.000GDP_{t-1} - 0.02406\text{INFLATION}_{t-1} + 0.668117\text{INTEREST}_{t-1} - 33.09433$$

Table 7: Results of Cointegration Equation

Cointegrating Eq:	CointEq1
LNGDP(-1)	1.000000
Inflation(-1)	-0.024060 (0.04971), [-0.48406]
Interest(-1)	0.668117 (0.07467), [8.94810]
C	-33.09433

Source: Source: Author's own estimate

The result for inflation is negative and insignificant in the long run. With an 1% increase of inflation, GDP will decrease by 2.40%.Interest rate also has significant positive impact on GDP in the long run. If the interest rate raised by 1%, GDP will increase by 66.81%.

Table 8: VECM estimation results and test

Error Correction:	D(LNGDP)	D(Inflation)	D(Interest)
CointEq1	-0.054275 (0.02106), [-2.57729]	-1.905241 (0.51533), [-3.69712]	-0.473812 (0.19494), [-2.43055]
D(LNGDP(-1))	-0.238017 (0.22997), [-1.03498]	0.372475 (5.62765), [0.06619]	-0.335681 (2.12884), [-0.15768]
D(LNGDP(-2))	-0.144672 (0.22006), [-0.65743]	0.707834 (5.38499), [0.13145]	-2.688522 (2.03704), [-1.31982]
D(Inflation(-1))	0.007831 (0.00585), [1.33759]	-0.370545 (0.14326), [-2.58653]	0.041844 (0.05419), [0.77214]
D(Inflation(-2))	0.002346 (0.00604), [0.38874]	-0.082476 (0.14771), [-0.55837]	0.036029 (0.05588), [0.64482]
D(Interest(-1))	0.018124 (0.02289), [0.79169]	-0.333761 (0.56021), [-0.59578]	0.811280 (0.21192), [3.82828]
D(Interest(-2))	0.000255 (0.01854), [0.01376]	1.746086 (0.45359), [3.84945]	-0.190652 (0.17159), [-1.11111]
C	0.121509 (0.03433), [3.53964]	-0.070025 (0.84003), [-0.08336]	0.168759 (0.31777), [0.53107]
Log likelihood	-19.89858		
Akaike information criterion	3.607583		
Schwarz criterion	4.914068		

Source: Author's own estimate

In order to check the stability of the model we have estimated the vector error correction (VECM) model. The results in Table 8 indicate that the error correction term for GDP growth bears the correct sign i.e. it is negative and statistically significant at 5 percent significant level. It indicates 0.054 percent speed of convergence towards equilibrium position in case of any disequilibrium situation.

The coefficient of error correction term for inflation bears the correct sign i.e. negative and statistically significant with the convergence speed of 1.90 percent towards equilibrium. The coefficient of error correction term for interest bears the correct sign i.e. negative and statistically significant with the convergence speed of 0.47 percent towards equilibrium.

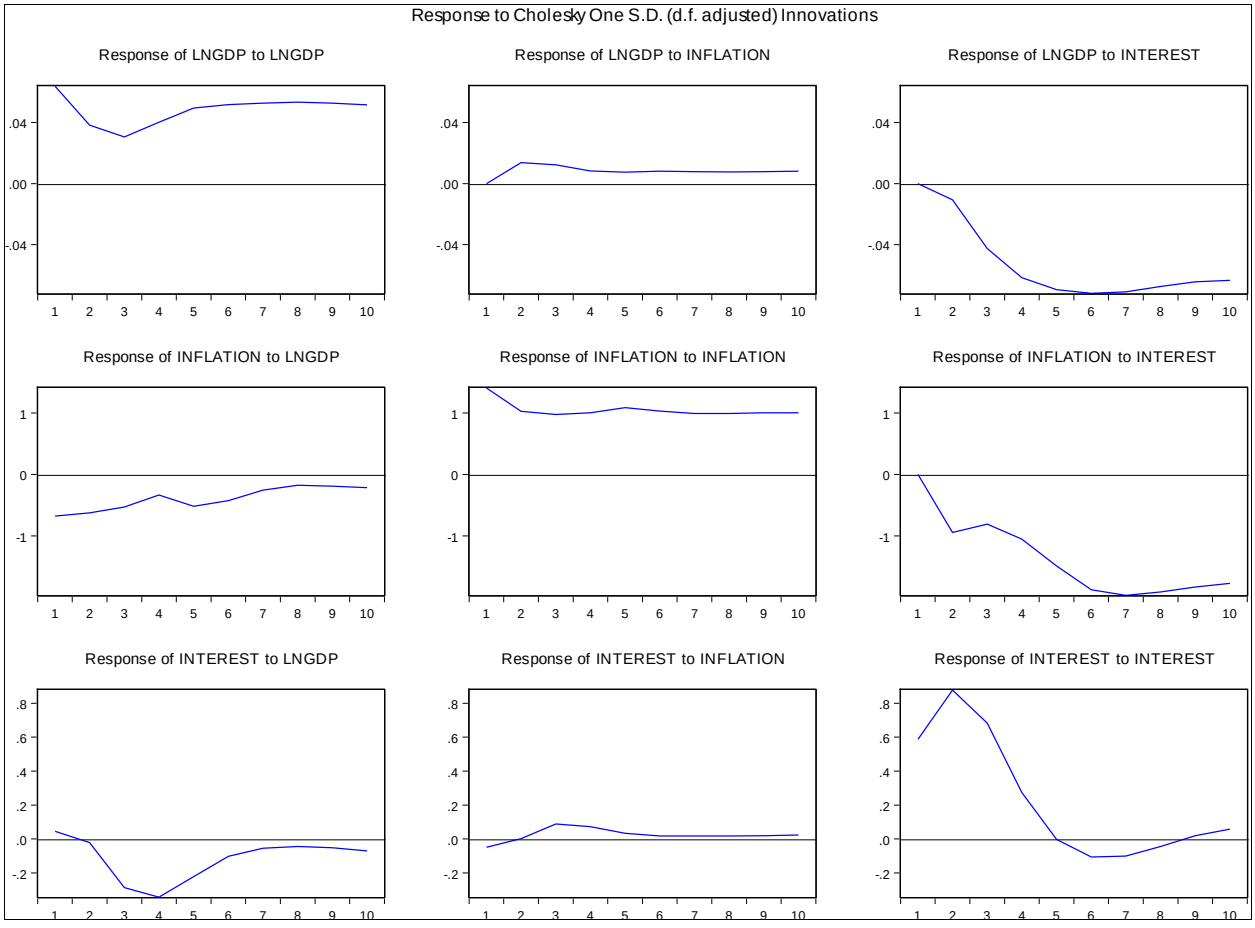

Fig 1: Impulse Responses Function test (IRF):

An impulse response function traces the effect of a one-time shock to one of the innovations on current and future values of the endogenous variables. The dynamic interaction between the variables can be captured by the Impulse Response Function Analysis which traces the response of a variable to one standard deviation change in any other variable. The impulse response functions identify the effects of an unanticipated one percentage point temporary increase in the growth of one variable on other variables in the system, and therefore offer a measure of convergence across the variables. These are estimated with the VAR systems used in the granger causality analysis.The response is also portrayed graphically, with horizon (period) on the horizontal axis and response on the vertical axis.

The response of LNGDP indicates how GDP responds to the standard deviation shock of variables. GDP responds positively to the shock of inflation by one standard deviation (INFLATION) during the given period of time. However, GDP responds negatively to the shock of interest (INTEREST) from the second period by 1 standard deviation through entire 10th period. Furthermore, GDP responds positively to the shock of GDP by 1 standard deviation.

The response of Inflation result shows that inflation responds negatively to the shock of interest by one standard deviation in the second to tenth periods; inflation responds negatively to the shock of GDP by one standard deviation in every period. Finally, the response of inflation to the shock of inflation is positive by one standard deviation in every given period. Interest responds positively to the shock of GDP in the first period. Subsequently, the response of Interest indicates that Interest responds negatively to the one standard deviation shock of GDP during the other given periods. Interest responds positively to the shock of inflation in all periods except first and second period. Interest responds positively to the shock of Interest except for the period of fifth, sixth, seventh, eighth, ninth period.

Table 9: Variance Decomposition Approach (VDA)

Period	Variance Decomposition of LNGDP				Variance Decomposition of Inflation				Variance Decomposition of Interest			
	S.E.	LNGDP	Inflation	Interest	S.E.	LNGDP	Inflation	Interest	S.E.	LNGDP	Inflation	Interest
1.	0.0638	100.00	0.000000	0.000000	1.562913	18.73090	81.26910	0.000000	0.591222	0.567774	0.675238	98.75699
2.	0.0764	94.82	3.238194	1.943902	2.187672	17.75487	63.62571	18.61941	1.058882	0.216816	0.211020	99.57216
3.	0.0934	74.07	3.877501	22.05434	2.583063	16.91858	59.88913	23.19229	1.294919	5.051443	0.600370	94.34819
4.	0.1192	56.91	2.865778	40.22917	2.983947	13.92421	56.24343	29.83236	1.369002	10.76536	0.816859	88.41778
5.	0.1467	48.92	2.154569	48.92666	3.546009	11.98711	49.25475	38.75814	1.387267	13.04248	0.852200	86.10532
6.	0.1716	44.85	1.797796	53.35444	4.164824	9.740952	41.84919	48.40986	1.395187	13.43572	0.858970	85.70531
7.	0.193275	42.83	1.581843	55.58999	4.718267	7.882586	37.02366	55.09375	1.399960	13.49444	0.869254	85.63631
8.	0.211693	42.05994	1.446197	56.49386	5.189822	6.629327	34.26309	59.10758	1.401483	13.56565	0.882783	85.55156
9.	0.227627	41.75653	1.369109	56.87437	5.598596	5.812059	32.66168	61.52627	1.402708	13.68012	0.899261	85.42062
10.	0.241971	41.49052	1.324307	57.18517	5.962140	5.254029	31.64769	63.09828	1.405870	13.86884	0.921832	85.20933

Source: Author's own estimate

Variance decomposition determines how much variability in the dependent variable is lagged by its variance and other variables' variances. Additionally, it explains which of the independent variables is more robust in explaining the dependent variables' variability over time. In VCD, the order of the variables is of paramount importance. The order should be from exogenous to endogenous (Tari, Koc, Abasiz, 2019, 485) [13]. Variance decomposition of LNGDP illustrates that GDP in the first period can explain its own variance by 100%. However, in the 10th period, inflation and interest can explain the variance of GDP by 1.32% and 57.18%, respectively, while the GDP can explain its own variance by 41.49%. In other words, inflation and interest are the causes of the variance of the GDP.

As shown in variance decomposition of INFLATION, in the first period, inflation accounts for 81.26% variation of its own variance, as GDP explains about 18.73% of inflation variation in the short-run. However, GDP is able to account for lesser amount in the gradual passage of time, and in the 10th period, GDP accounts for 5.25% of inflation variation in the long-run, while inflation can explain 31.64% of its variation. Therefore, it can be said that there is a relationship between GDP and inflation, and GDP has a significant impact on inflation.

It has been observed from the result of variance decomposition of INTEREST that from the first period to the 10th period, GDP (LNGDP) has a significant effect on INTEREST in both the short and long-run and its intensity increases with the passage of time. GDP explains roughly 6% of INTEREST variation in the given periods, as INTEREST accounts for approximately 98.76% in the first period and 85.2% in the 10th period of its variation. In addition, inflation (LNINF) explains 0.68% of INTEREST variation in the first period and explains 0.92% of INTEREST variation in the 10th. Hence, it can be predicted that inflation also has a little bit of impact on interest, but the effect of inflation on interest increases slightly over the period. In short, GDP can significantly account for the variation of inflation and interest. But, Interest can explain inflation and inflation cannot explain interest.

Summary and Conclusion

The article tries to enquire into the causal nexus among inflation, interest rate and economic growth via GDP growth in India and also to judge impact of inflation, interest rate on economic growth via GDP growth in India using the annual data for the period, 1996-2024 which includes the 29 annual observations. The study has been conducted by using Johansen cointegration, granger causality test, Variance decomposition and Impulse response function. The unit root properties of the data were examined using the Augmented Dickey Fuller test (ADF) after which the cointegration and causality tests were conducted. The error correction models were also estimated in order to examine the short-run dynamics.

The major research findings of the study include the following:

The generalized method of moment Method suggests that inflation has insignificant positive impact on GDP growth in India., interest rate has significant negative impact on GDP growth. The unit root test conducted by Augmented Dickey Fuller test (ADF) clarified that GDP growth, inflation and

interest are non-stationary at level but, they are found to be stationary at first difference using Augmented Dickey Fuller test (ADF) test for unit root. The co integration test confirmed that GDP growth, inflation and interest rate in India are cointegrated, indicating an existence of long run equilibrium relationship among them as confirmed by the Johansen cointegration test results. The Granger causality test finally confirmed that there may have significant causal relationship between inflation and GDP; interest and GDP growth in unidirectional way which runs from inflation to GDP and from interest to GDP in India which is also supported by variance decomposition analysis (VDA). Quite similar results we find from the IRFs analysis which suggests that an impulse response function traces the effect of a one-time shock to one of the innovations on current and future values of the endogenous variables like GDP, interest and inflation. The error correction estimates gave evidence that the Error-Correction Term is statistically significant and has a negative sign, which confirms that there isn't any problem in the long-run equilibrium relation among GDP growth, interest and inflation. The error correction estimates also indicate appropriate speed of convergence towards equilibrium position in case of any disequilibrium situation.

It is suggestive at the end that policymakers and economists should constantly monitor and execute monetary and fiscal policy to manage economic growth, inflation, and interest rate interplay because of the reason that these three factors directly persuade country's living standards.

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