

www.ijprems.com editor@ijprems.com

A STUDY ON EFFECTIVENESS OF RBI'S MONETARY POLICY IN FOSTERING ECONOMIC GROWTH

Deepa Baliga¹, Professor, Akshatha P²

¹IV semester, Finance specialization, Department of Business Administration, Sahyadri College of Engineering and Management.

²Assistant Professor, Department of Business Administration, Sahyadri College of Engineering and Management.

DOI: https://www.doi.org/10.58257/IJPREMS35888

ABSTRACT

This study investigates the impact of the Reserve Bank of India's (RBI) monetary policy on economic growth from 2014 to 2024, focusing on its ability to balance growth and inflation amidst a volatile global economic environment. By examining the influence of key monetary instruments—such as the bank rate, repo rate, reverse repo rate, and Statutory Liquidity Ratio (SLR)—on macroeconomic variables like GDP growth, inflation, money supply, and exchange rates, the study employs regression, correlation, and Vector Auto Regression (VAR) models using secondary data. The findings reveal that conventional tools like the bank rate and CRR have limited direct impact, while the reverse repo rate and SLR significantly affect economic indicators, particularly liquidity and currency stability. Policymakers are provided with recommendations to refine monetary interventions, ensuring sustainable economic growth, controlled inflation, and stable exchange rates in India.

Key Words: Monetary policy, Reserve Bank of India (RBI), Economic growth, inflation control, GDP, Macroeconomic indicators, Vector Auto Regression Model (VAR), CRR, SLR

1. INTRODUCTION

With a nominal GDP of over \$3.7 trillion India has one of the biggest economies in the world and is currently ranked fifth in the world. Although being one of the world's largest economies expanding at the quickest rate, the economy of India still confronts a number of serious obstacles rising rates of inflation, joblessness, stressed banking industry, growing income disparity, exposure to outside threats etc. The success of monetary policy of RBI in promoting growth of the economy becomes critical in this regard.

Central bank's most important tool for controlling inflation, regulating the money supply, stabilizing the currency, and promoting economic growth is Monetary policy. Monetary policy serves two purposes. It keeps inflation under control by modifying the supply of money and interest rates, while also boosting growth by employing a variety of measures, including the repo rate, reverse repo rate, cash reserve ratio, SLR, and other operations.

When the RBI lowers the repo rate and bank rate, banks' borrowing costs fall making it affordable for businesses to invest in new projects and consumers to buy products and services, promoting economic activity and GDP development. Similarly, RBI decreases the money that is available for banks to lend by raising the CRR and the SLR to keep inflation under control. The RBI can also attract foreign investment by maintaining attractive interest rates through its monetary policies. RBI works to create a balanced and viable economic environment that fosters long-term growth and development by carefully calibrating its policy tools. Thus, it is essential to understand the complicated interaction between different monetary policy instruments and economic indicators.

2. LITERATURE REVIEW

"An analysis of the effect of monetary policy changes on macroeconomic factors" (2017) by Moid U. Ahmad and Shamima Nasrin investigates how alterations in monetary policy impact key economic indicators in India, aiming to enhance policy-making. Using statistical tools such as correlation, regression, co-integration, and Vector Auto Regression (VAR) on monthly and quarterly data from 2011 to 2014, the study examines variables like GDP, inflation, foreign exchange rate, bank credit, and velocity of money against policy rates like CRR, SLR, Repo rate, Reverse Repo rate, and Bank rate. Significant findings include negative correlations between GDP and CRR, SLR, and Repo rates, and positive correlations between GDP and bank credit and bank rate. The study enhances understanding of monetary policy impacts and offers insights for better economic stability and policy formulation.

The paper titled **"Inflation, economic growth and monetary policy in India: A macroeconomic analysis"** (2002) by **K Singh** aims to examine the necessity of inflation control and the role of the RBI's monetary policy in managing inflation, within Indian economy by understanding the relation between inflation and growth of the economy. The study finds that economic growth in India is negatively impacted when inflation exceeds 5 percent. The study suggests that



editor@ijprems.com

price-based instruments like interest rates will be more effective for inflation control than the current monetary policy instruments used by the RBI.

The paper, "Monetary Policy Analysis in an Inflation Targeting Framework in Emerging Economies: The Case of India," (2014) by Rudrani Bhattacharya and Ila Patnaik, aims to develop a model for analysing monetary policy in India. The researchers use a semi-structural New Keynesian open economy model. Key findings include the significant impact of aggregate demand and monetary policies on inflation. The study concludes that an inflation-targeting framework is crucial for stabilizing inflation expectations in India.

The research paper "A Study of Monetary Policy and its Has an Impact on GDP Performance (With Reference to Indian Economy)" (2019) by Shobhit Sagar and Prof. L.N. Koli aims to examine how monetary policies affect India's GDP from 2014 to 2018. The researchers use correlation, descriptive and regression analysis to explore the connection between key macroeconomic factors like interest rates, money supply, inflation, and GDP. Their findings suggest that these variables have a small effect on GDP.

H. P. Mathur and Shailaja Singh's "Changing Economy Vis-à-vis Changing Monetary Policies: A Study to Assess the Impact of Reserve Bank of India (RBI) Policies of Interest Rates and Exchange Rates" (2016) examines how the RBI's monetary policies affect interest rates and exchange rates, as well as other economic variables. The study emphasizes whether macroeconomic variables' responses to interest rate fluctuations have a broad impact on money supply and economic stability. It discovers a significant impact of the RBI's policies on several sectors of the economy, affecting inflation rates, liquidity, and economic growth. The study suggests that effective implementation of the RBI's monetary policies, which include interest rates and currency rates, is critical for moulding India's economy.

3. RESEARCH DESIGN

3.1. PROBLEM STATEMENT

India, like many other countries, is currently dealing with the challenge of growing inflation, unpredictable global markets and varying levels of liquidity. This leads to decreased consumer spending, increased cost of living, currency devaluation, increased borrowing and debt levels, trade imbalances etc. As a result, RBI's role in stabilizing the economy while promoting growth becomes increasingly complex. This research aims to evaluate the efficacy of the RBI's strategies in achieving sustainable economic growth, addressing challenges such as inflation control, contraction of money supply and stabilising the exchange rates. The findings shall offer valuable inputs for policymakers to refine monetary interventions and enhance their efficacy in the current economic scenario.

3.2. NEED FOR THE STUDY

Considering the role that RBI's monetary policy plays, it becomes imperative to check how CRR (cash reserve ratio), Reverse repo rate, Bank rates, SLR (statutory liquidity ratio) and Repo Rate effect economic development & stability overtime. These relationships will help to empower policymakers in terms of increasing GDP growth, managing inflation ensuring healthy money supply and stable exchange rates. This understanding is essential for attaining balanced and sustainable economic development, reducing economic volatility, and improving the country's overall economic well-being.

3.3. OBJECTIVES

- To pinpoint and measure the indicators of economic growth
- To inspect the relationship between the efficacy of Monetary policies on selected economic indicators
- To Evaluate the Impact of RBI's Monetary Policy on fostering economic growth

3.4. RESEARCH METHODOLOGY

The study adopts quantitative research method and secondary data will be used to analyse the effectiveness of monetary policy by RBI which is available from published sources such as Reserve Bank of India (RBI) publications, various government & financial institution. The data will cover dependent variables including exchange rates, GDP, inflation rates, money supply and independent variables including policy rates over a specified period, from 2014 to 2024. The connection between monetary policy tools of RBI and various core macroeconomic indicators is first explored through correlation, regression and Vector Auto Regression Model.

3.5. LIMITATIONS

- 1. It may not fully account for global economic events and foreign shocks that have an independent impact on India's growth.
- 2. The complex interplay between monetary policy, other fiscal policies, structural reforms, and regulatory measures can make it difficult to assess the RBI's policy efficacy.
- 3. Furthermore, the time lag in the impact of monetary policy makes it challenging to pinpoint the exact timing of their impact due to lagged impacts of monetary policy on the economy.

@International Journal Of Progressive Research In Engineering Management And Science



editor@ijprems.com

INTERNATIONAL JOURNAL OF PROGRESSIVE RESEARCH IN ENGINEERING MANAGEMENT AND SCIENCE (IJPREMS) (Int Peer Reviewed Journal) Vol. 04, Issue 09, September 2024, pp : 48-57

e-ISSN : 2583-1062 Impact Factor : 5.725

4. DATA ANALYSIS AND INTERPRETATION

4.1. CORRELATIONS

	CPI	GDP	Money Supply	Exchange Rate
	p-value0.886	p-value 0.292	p-value 0.611	p-value 0.460
CRR	R-value (0.052)	R-value 0.371	R-value 0.184	R-value 0.265
	p-value 0.661	p-value 0.000	p-value 0.000	p-value 0.001
SLR	R-value (0.159)	R-value (0.899)	R-value (0.943)	R-value (0.863)
	p-value 0.679	p-value 0.149	p-value 0.042	p-value 0.137
Repo	R-value (0.150)	R-value (0.492)	R-value (0.649)	R-value (0.504)
	p-value 0.190	p-value 0.004	p-value 0.000	p-value 0.000
RevRepo	R-value (0.452)	R-value (0.818)	R-value (0.944)	R-value (0.901)
	p-value 0.881	p-value 0.079	p-value 0.026	p-value 0.099
Bank Rate	R-value (0.055)	R-value (0.579)	R-value (0.695)	R-value (0.551)

The correlation in this study will be used in an attempt to find links in between monetary policy tools with the RBI, such as SLR, Repo Rate and the CRR and some economic variables like GDP growth and inflation. Knowing these relationships is important to see how close these variables are, which could give an idea of the success of monetary policy.

Interpretation

There is a weak and statistically negligible positive link between CRR, CPI, money supply, and exchange rate. SLR has a substantial, statistically significant negative association indicating that higher SLR tends to slow GDP development, most likely because it limits the cash available for banks to lend, limiting economic activity and the availability of money inside the economy. The repo rate has no substantial impact on any of the macroeconomic variables. The reverse repo rate is strongly negatively correlated with GDP, money supply, and rate of exchange.

4.2. REGRESSIONS

Regression analysis enables quantification of the impact of changes in monetary policy rates on economic indicators, resulting in a more precise understanding of these linkages.

Regression 1: Reverse Repo Rate and GDP

H₀: Reverse Repo Rate is not a significant predictor of GDP.

H1: Reverse Repo Rate is a significant predictor of GDP.

Interpretation: The p-value was 0.004 which was less than 0.05, Hence null hypothesis (H_0) was **rejected** and alternative hypothesis (H_1) was **accepted** So, Reverse Repo Rate is a significant predictor of GDP. Beta value is **-0.818**, we can say that for every one unit increase in **Reverse Repo Rate**, **GDP** will reduce by **81.8%**. This analysis supports the hypothesis that higher Reverse Repo Rates, which restrict the economy's liquidity, might contribute to slower economic growth.

Regression 2: Reverse Repo Rate and Consumer Price Index (CPI)

Ho: Reverse Repo Rate is not a significant predictor of CPI.

H1: Reverse Repo Rate is a significant predictor of CPI.

Interpretation: The regression study indicates an inverse relation between the Reverse Repo Rate and inflation, where an increase in the Reverse Repo Rate is associated with a fall in inflation. However, this relationship was not statistically significant since the p-value was 0.190 which was greater than 0.05. Hence, we accepted null hypothesis that Reverse Repo Rate is not a significant predictor of CPI.

Regression 3: Reverse Repo Rate and Money Supply

H₀: Reverse Repo Rate is not a significant predictor of money supply.

H1: Reverse Repo Rate is a significant predictor of money supply.

Interpretation: There is a good statistically significant and substantial negative link between the Reverse Repo Rate and the money circulation with a p-value of 0.000 which is smaller than 0.05. A unit rise in the Reverse Repo Rate corresponds to a 94.4% drop in the money supply. Higher Reverse Repo Rates encourage banks to deposit excess funds with the central bank, thereby lowering the economy's money supply.



Regression 4: Reverse Repo Rate and the rate of Exchange

Ho: Reverse Repo Rate is not a significant predictor of Exchange rate.

H₁: Reverse Repo Rate is a significant predictor rate

Interpretation: The p-value of 0.000 suggested that higher Reverse Repo Rates will dramatically boost the currency. The unstandardized coefficient for the Reverse Repo Rate is -4.465, indicating that for every one-unit rise in the Reverse Repo Rate, the exchange rate falls by 4.465 units. The standardized coefficient (Beta) of -0.901 shows a highly unfavourable association. Overall, it may be inferred that the reverse repo rate is a significant predictor of the rate of exchange.

Regression 5: Repo Rate and Supply of Money

H₀: Repo Rate is not an important predictor of Money Supply.

H₁: Repo Rate is an important predictor of Money Supply.

Interpretation: In this case, the p-value was 0.042. Therefore, Repo Rate is an essential predictor of Supply of Money. The beta value was -0.649 which indicates that for each one-unit increase in the Repo Rate, the Supply of Money decreases by 64.9%. So, higher Repo Rates effectively reduce the money supply.

Regression 6: Statutory Liquidity Ratio (SLR) and GDP

Ho: SLR is not a significant predictor of GDP.

H1: SLR is a significant predictor of GDP.

Interpretation: The bi-variate regression analysis between SLR and GDP indicated a very strong negative relationship with a Beta of -0.899. The p-value of 0.000 show that this relationship is highly statistically significant thereby rejecting null hypothesis. This implies that higher SLR significantly reduces GDP, likely by restricting banks' lending capacity, thereby constraining economic growth.

Regression 7: Statutory Liquidity Ratio (SLR) and Exchange Rate

H₀: SLR is not a significant predictor of Exchange rate.

H1: SLR is a significant predictor of Exchange rate.

Interpretation: The p-value indicated a significant negative correlation, which implies that an increase in the SLR leads to an appreciation of the currency. It also suggests that higher SLR can effectively stabilize the exchange rate by controlling money supply and inflation.

Regression 8: Statutory Liquidity Ratio (SLR) and Money Supply

Ho: SLR is not a significant predictor of Money Supply.

H₁: SLR is a significant predictor of Money Supply.

Interpretation: The p-value of 0.000 show that the relationship is highly statistically significant. The beta value -0.943 shows negative relation between SLR and money supply indicating that for each one-unit increase in the SLR, the money supply decreases by 94.3%. This strong inverse relationship suggests that increasing the SLR constrains the banking sector's ability to lend, effectively reducing the amount of money circulating in the economy. Therefore, policymakers can use SLR adjustments as a powerful tool to control liquidity and manage economic stability.

Regression 10: Repo Rate, CRR, Bank Rate and GDP

Ho: Repo rate, CRR and Bank Rate is not a significant predictor of GDP.

H1: Repo rate, CRR and Bank Rate is a significant predictor of GDP.

Interpretation: Here, in the multi-variate regression analysis, only the p-value of CRR was lesser than 0.05 proving to be an important predictor of GDP. CRR showed a moderate positive relationship (Beta = 0.617). The remaining two variables Bank Rate and repo rate showing a strong negative relationship.

4.3. VECTOR AUTO REGRESSION (VAR) MODEL

The VAR model is employed as it aids in projecting and analysing the impacts of policy changes over time, providing a more detailed picture of the fruitfulness of monetary policy. Several VAR systems could be examined based on the dependent and independent variables, but in line with the research objective, two specific VAR-based models are analysed as outlined below.



INTERNATIONAL JOURNAL OF PROGRESSIVE RESEARCH IN ENGINEERING MANAGEMENT AND SCIENCE (IJPREMS) (Int Peer Reviewed Journal) Vol. 04, Issue 09, September 2024, pp : 48-57

e-ISSN : 2583-1062

Impact Factor : 5.725

editor@ijprems.com

VAR System	n 1:	CRR,	SLR	and	GDP

	CRR	SLR	GDP
	0 240867	1 847725	3513 003
CRR(-1)	(1 71700)	(0.85745)	(26611.3)
	[0 14544]	[2 15491]	[_0 13205]
	[0.14044]	[2.10401]	[-0.10200]
SLR(-1)	-0.040862	-0.468247	308.8354
	(1.10115)	(0.54958)	(17056.6)
	[-0.03711]	[-0.85201]	[0.01811]
GDP(-1)	-7.88E-07	-0.000118	1.014954
	(9.9E-05)	(5.0E-05)	(1.53833)
	[-0.00793]	[-2.37715]	[0.65978]
С	3.910059	36.89558	13351.17
	(28.4832)	(14.2159)	(441199.)
	[0.13728]	[2.59537]	[0.03026]
P. equared	0.049647	0.077597	0 001210
Adi D aquarad	0.040047	0.977307	0.001310
Sum sa reside	1 355825	0.304139	3 255+08
S E equation	0.520735	0.357750	8066.087
E statistic	0.020700	72 60/10	12 37645
l og likelibood	-4 252782	2 001774	-91 08422
	1 833052	0.444050	21 12083
Schwarz SC	1 921607	0.531706	21 21748
Mean dependent	3 983796	19 16389	141688.9
S.D. dependent	0.422071	1.372433	18510.16
Determinant resid covaria	nce (dof adj.)	11570.21	
Determinant resid covaria	ince	1983.918	
Log likelihood		-72.47907	
Akaike information criterio	on	18.77313	
Schwarz criterion		19.03609	
Number of coefficients		12	

CRR = C(1)*CRR(-1) + C(2)*SLR(-1) + C(3)*GDP(-1) + C(4)						
	Coefficient	Std. Error	t-Statistic	Prob.		
C(1) C(2) C(3) C(4)	0.249867 -0.040862 -7.88E-07 3.910059	1.717990 1.101148 9.93E-05 28.48316	0.145441 -0.037109 -0.007932 0.137276	0.8900 0.9718 0.9940 0.8962		
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.048647 -0.522165 0.520735 1.355825 -4.252782 0.085224 0.965151	Mean depen S.D. depend Akaike info c Schwarz crit Hannan-Qui Durbin-Wats	dent var ent var riterion erion nn criter. on stat	3.983796 0.422071 1.833952 1.921607 1.644792 1.811386		

SLR = C(5)*CRR(-1) + C(6)*SLR(-1) + C(7)*GDP(-1) + C(8)						
	Coefficient	Std. Error	t-Statistic	Prob.		
C(5) C(6) C(7) C(8)	1.847725 -0.468247 -0.000118 36.89558	0.857447 0.549582 4.96E-05 14.21592	2.154914 -0.852006 -2.377150 2.595371	0.0837 0.4331 0.0634 0.0485		
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.977587 0.964139 0.259898 0.337736 2.001774 72.69410 0.000152	Mean depen S.D. depend Akaike info o Schwarz crit Hannan-Qui Durbin-Wats	dent var ent var riterion erion nn criter. on stat	19.16389 1.372433 0.444050 0.531706 0.254890 2.139690		

GDP = C(9)*CRR(-1) + C(10)*SLR(-1) + C(11)*GDP(-1) + C(12)

	Coefficient	Std. Error	t-Statistic	Prob.
C(9) C(10) C(11) C(12)	-3513.903 308.8354 1.014954 13351.17	26611.33 17056.56 1.538331 441198.6	-0.132045 0.018107 0.659776 0.030261	0.9001 0.9863 0.5386 0.9770
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.881318 0.810109 8066.087 3.25E+08 -91.08422 12.37645 0.009456	Mean dependent var S.D. dependent var Akaike info criterion Schwarz criterion Hannan-Quinn criter. Durbin-Watson stat		141688.9 18510.16 21.12983 21.21748 20.94067 1.713076



editor@ijprems.com

INTERNATIONAL JOURNAL OF PROGRESSIVE
RESEARCH IN ENGINEERING MANAGEMENT
AND SCIENCE (IJPREMS)
(Int Peer Reviewed Journal)
Vol. 04, Issue 09, September 2024, pp : 48-57C 1351(1)Vol. 04, Issue 09, September 2024, pp : 48-575.725

e-ISSN:

Interpretation: As seen by low t-statistics and high p-values, none of the factors in the CRR equation—including lagged CRR, SLR, and GDP—show a significant effect, indicating poor predictive potential for CRR. Lagged SLR has a negative, but not statistically significant, effect on current SLR in the SLR equation. Nonetheless, the lagged GDP coefficient is almost significant and has a negative impact, indicating that a larger GDP in the past would reduce the current SLR. According to the GDP equation, historical GDP has a small but positive influence, meaning that lagged CRR and SLR have no discernible effects on GDP.

VAR System 2: Repo Rate, Reverse Repo Rate and GDP

$REVERSE_REPO_RATE = C(1)*REVERSE_REPO_RATE(-1) + C(2)$ $*REPO_RATE(-1) + C(3)*GDP(-1) + C(4)$						
	Coefficient	Ste	d. Error	t-Statistic	Prob.	
C(1)	0.425987	0.4	464949	0.916203	0.4016	
C(2)	0.205904	0.4	457174	0.450383	0.6713	
C(3)	-2.21E-05	2.	29E-05	-0.964016	0.3793	
C(4)	4.283296	4.5	509774	0.949781	0.3858	
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.817713 0.708340 0.696752 2.427317 -6.873476 7.476405 0.026948	Mea S.D Aka Sch Har Dur	an depende . depende ike info cr warz crite nnan-Quin bin-Watso	dent var ent var riterion rrion n criter. on stat	4.697824 1.290149 2.416328 2.503983 2.227168 1.436592	
	REVERS	SE	REPO	RATE	GDP	
REVERSE_REPO_RA	0.4259	987	-0.857	7772 -8	313.579	
	(0.464	95)	(0.51	082) (3	3802.92)	
	[0.916	20]	[-1.67	920] [-2	2.18610]	
REPO_RATE(-1)	0.2059	904	1.359	9185 4	563.263	
	(0.457	17)	(0.50	228) (3	3739.33)	
	[0.450	38]	[2.70	603] [~	1.22034]	
GDP(-1)	-2.21E-	-05	-4.928	E-06 0	.717300	
	(2.3E-	05)	(2.5E	(-05) (0).18750)	
	[-0.964	02]	[-0.19	540] [3	3.82558]	
С	4.2832	296	2.767	7093 6	1116.43	
	(4.509	77)	(4.95	472) (3	36886.5)	
	[0.949	78]	[0.55	848] [<i>*</i>	1.65688]	
R-squared	0.8177	713	0.681	1489 0 0383 0 0912 1 5495 5 0312 2 0312 2 0312 -8 1455 5 1312 -8 14514 2 1495 5 1495 5 1495 5 1497 2 1498 2 1499 2 1490 2 1491 1 1491 1 1491 1	.940756	
Adj. R-squared	0.7083	340	0.490		.905210	
Sum sq. resids	2.4273	317	2.929		.62E+08	
S.E. equation	0.6967	752	0.765		698.894	
F-statistic	7.4764	405	3.566		6.46581	
Log likelihood	-6.8734	476	-7.720		7.95765	
Akaike AIC	2.4163	328	2.604		0.43503	
Schwarz SC	2.5039	983	2.692		0.52269	
Mean dependent	4.6978	324	5.706		41688.9	
S.D. dependent	1.2901	49	1.072		8510.16	
Determinant resid covariance (dof adj.)1252981.Determinant resid covariance214845.9Log likelihood-93.56088Akaike information criterion23.45797Schwarz criterion23.72094Number of coefficients12						
REPO_RATE = C(5)*RE -1) + C(7)*GDP(-1)	VERSE_REF + C(8)	PO_R	ATE(-1) +	+ C(6)*REP	D_RATE(
	Coefficient	St	d. Error	t-Statistic	Prob.	
C(5)	-0.857772	0.	510822	-1.679201	0.1539	
C(6)	1.359185	0.	502279	2.706034	0.0425	
C(7)	-4.92E-06	2.	52E-05	-0.195397	0.8528	

-4.526-00	2.526-05	-0.133337	0.0520
2.767093	4.954716	0.558477	0.600
0 681489	Mean depen	dent var	5 70648
0.490383	S.D. depend	1.07231	
0.765495	Akaike info o	2.60451	
2.929912	Schwarz crite	2.69216	
-7.720312	Hannan-Quinn criter.		2.41535
3.566021	Durbin-Watson stat		1.89017
0.102419			
	2.767093 0.681489 0.490383 0.765495 2.929912 -7.720312 3.566021 0.102419	1.522 2.767093 4.954716 0.681489 Mean depen 0.490383 S.D. depend 0.765495 Akaike info c 2.929912 Schwarz critt -7.720312 Hannan-Quii 3.566021 Durbin-Wats 0.102419 Image: Comparison of the comparis	1.022 0.052 0.052 0.050 0.050000 2.767093 4.954716 0.558477 0.681489 Mean dependent var 0.490383 S.D. dependent var 0.765495 Akaike info criterion 2.929912 Schwarz criterion -7.720312 Hannan-Quinn criter. 3.566021 Durbin-Watson stat 0.102419



editor@ijprems.com

INTERNATIONAL JOURNAL OF PROGRESSIVE RESEARCH IN ENGINEERING MANAGEMENT AND SCIENCE (IJPREMS) (Int Peer Reviewed Journal)

Vol. 04, Issue 09, September 2024, pp : 48-57

2583-1062 Impact Factor :

e-ISSN:

5.725

GDP = C(9)*REVERSE_REPO_RATE(-1) + C(10)*REPO_RATE(-1) + C(11)*GDP(-1) + C(12)						
	Coefficient	Std. Error	t-Statistic	Prob.		
C(9) C(10) C(11) C(12)	-8313.579 4563.263 0.717300 61116.43	3802.922 3739.329 0.187501 36886.47	-2.186103 1.220343 3.825584 1.656879	0.0805 0.2767 0.0123 0.1584		
R-squared Adjusted R-squared S.E. of regression Sum squared resid Log likelihood F-statistic Prob(F-statistic)	0.940756 0.905210 5698.894 1.62E+08 -87.95765 26.46581 0.001703	Mean dependent var S.D. dependent var Akaike info criterion Schwarz criterion Hannan-Quinn criter. Durbin-Watson stat				

Interpretation: R-squared value for the Reverse Repo Rate equation is 0.818, indicating a high match. All the coefficients in this equation are not statistically significant, indicating that the predictors' individual effects on the Reverse Repo Rate are small. A strong autoregressive link is demonstrated by the Repo Rate lag coefficient alone, which is the sole significant component of the equation with an R-squared of 0.681, indicating considerable explanatory power.

VAR System 3: Reverse Repo Rate, SLR and CPI

	SLF	R	REVEF	RSE		CPI
SLR(-1)	0.977	377	0.827	971	-0.	716843
	(0.183	85)	(0.29	416)	(0	52514)
	[5 316	151	[2.81	4681	رن 1_1	365041
	10.010	10]	[2.01	100]		.00001]
REVERSE REPO RA	-0.193	434	-0.219	9343	0.	498793
	(0.242	62)	(0.38	820)	(0	.69302)
	[-0.797	261	[-0.56	5031	0]	719741
CPI(-1)	0.0662	259	-0.457	7870	0.	580461
,	(0.134	22)	(0.21	475)	(0	.38337)
	[0.493	671	[-2.13	2131	[1	.514101
С	0.6239	964	-8.104	1589	13	3.55235
_	(2.183	95)	(3.49	432)	(6	.23813)
	ſ 0.285	711	ſ-2.31	936Î	ſ2	.172501
	•		-		-	
R-squared	0.9699	957	0.912	965	0.	591191
Adj. R-squared	0.9519	930	0.860)744	0.	345906
Sum sq. resids	0.452	712	1.158	8946	3.	693576
S.E. equation	0.3009	903	0.481	445	0.	859485
F-statistic	53.808	350	17.48	3274	2.	410216
Log likelihood	0.6833	305	-3.546	6737	-8.	762615
Akaike AIC	0.7370	043	1.677	053	2.	836137
Schwarz SC	0.8240	599	1.764	708	2.	923792
Mean dependent	19.16	389	4.697	824	4.	980296
S.D. dependent	1.3724	433	1.290	149	1.	062719
·	-			-		
Determinant resid covar	riance (dof a	ıdj.)	0.003	3133		
Determinant resid cova	riance		0.000	537		
Log likelihood			-4.430	0866		
Akaike information crite	rion		3.651	304		
Schwarz criterion			3.914	270		
Number of coefficients			12	2		
SLR = C(1)*SLR(-1) + C + C(4)	(2)*REVERS	E_RE	PO_RAT	E(-1) +	C(3)	*CPI(-1)
	Coefficient	Sto	I. Error	t-Sta	tistic	Prob.
C(1)	0 077377	0.1	83851	5 316	\$1/18	0 0033
C(2)	-0 193434	0.1	42623	_0 707	7262	0.0032
C(2)	0.066250	0.2	3/217	0.191	202	0.4013
C(3)	0.000209	2.1	394211 830/5	0.493	5705	0.0420
	0.023304	۷.۱	00340	0.200		0.7000
R-squared	0 969957	Mea	in depend	lent va	r	19 16389
Adjusted R-squared	0.951930	S.D.	depende	ent var		1.372433

S.E. of regression

Log likelihood

Prob(F-statistic)

F-statistic

Sum squared resid

0.300903

0.452712

0.683305

53.80850

0.000315

Akaike info criterion

Hannan-Quinn criter.

Durbin-Watson stat

Schwarz criterion

0.737043

0.824699

0.547883

3.144004



editor@ijprems.com

INTERNATIONAL JOURNAL OF PROGRESSIVE RESEARCH IN ENGINEERING MANAGEMENT AND SCIENCE (IJPREMS) (Int Peer Reviewed Journal)

Vol. 04, Issue 09, September 2024, pp : 48-57

e-ISSN : 2583-1062

Impact Factor : 5.725

REVERSE_REPO_RA E(-1) + C(7)*CPI(REVERSE_REPO_RATE = C(5)*SLR(-1) + C(6)*REVERSE_REPO_RAT E(-1) + C(7)*CPI(-1) + C(8)						
	Coefficient	Std. Error	t-Statistic	Prob.			
C(5)	0.827971	0.294161	2.814684	0.0373			
C(6)	-0.219343	0.388198	-0.565030	0.5965			
C(7)	-0.457870	0.214747	-2.132130	0.0862			
C(8)	-8.104589	3.494316	-2.319363	0.0681			
R-squared 0.912965 Mean dependent var 4.697824							
Adjusted R-squared	0.860744	S.D. depend	ent var	1.290149			
S.E. of regression	0.481445	Akaike info o	riterion	1.677053			
Sum squared resid	1,158946	Schwarz crit	erion	1.764708			
Log likelihood	-3.546737	Hannan-Quinn criter. 1.48789					
F-statistic	17.48274	Durbin-Wats	on stat	2.291728			
Prob(F-statistic)	0.004409						
CPI = C(9)*SLR(-1) + -1) + C(12)	C(10)*REVERS	SE_REPO_RA	TE(-1) + C(1	1)*CPI(
	Coefficient	Std. Error	t-Statistic	Prob.			
C(9)	-0 716843	0 525143	-1 365044	0 2305			
C(10)	0 498793	0.693019	0 719740	0 5039			
C(11)	0.580/61	0 383372	1 51/1006	0.0000			
C(12)	12 55225	6 220125	2 172504	0.1904			
	13.00235	0.230125	2.172304	0.0019			
R-squared	0.591191	Mean depen	dent var	4.980296			
Adjusted R-squared	0.345906	S.D. depend	ent var	1.062719			
S F of regression	0 859485	Akaike info criterion 2 836137					

Interpretation: With a high t-statistic (5.316) and p-value (0.0032), the lagged SLR coefficient in the SLR equation is significant and demonstrates a substantial positive influence of previous SLR on its present value. The CPI and Reverse Repo Rate lag coefficients, on the other hand, have little effect on SLR and are not significant. The lagged SLR is significant (p = 0.0373) for the Reverse Repo Rate equation, indicating that the previous SLR has a major influence on the current Reverse Repo Rate. While the lagged coefficient of the Reverse Repo Rate is not significant, the CPI coefficient is close to significance, suggesting some effect. Finally, none of the coefficients in the CPI equation have statistical significance. In general, the model indicates the presence of notable correlations, especially those between SLR and Reverse Repo Rate.

Schwarz criterion

Hannan-Quinn criter.

Durbin-Watson stat

2 923792

2.646977

2.571235

3.693576

8.762615

2.410216

0.182832

4. FINDINGS

- CRR and macroeconomic measures such as GDP, supply of money, rate of exchange, and CPI do not statistically
 positively correlate.
- SLR and GDP, supply of money has a statistically significant negative correlation. That means, an increase in SLR by RBI forces the banks to reserve more money which contracts the broad money and effects the purchasing power. This has a direct effect on economic activity.
- * No macroeconomic factor is significantly impacted by the repo rate.

Sum squared resid

Log likelihood

Prob(F-statistic)

F-statistic

- The money circulated within the economy is correlated negatively with bank rate, showing that a rise in bank rate reduces the quantum of money in circulation.
- * The exchange rate, GDP and money in circulation all have a significant inverse link with the reverse repo rate.
- The argument that higher reverse repo rates might impede economic growth by lowering liquidity is supported by the regression analysis, which shows that an increase in the rate results in a significant decline in GDP.
- Reverse reportate is a significant predictor of money supply and Exchange rate with higher reverse reportates leading to a substantial reduction in money supply and appreciation of the currency.
- The significant inverse link between repo rate and money supply affirms the idea that raising the repo rate causes borrowing to become more costly, thereby decreasing liquidity.
- SLR has a negative relationship with GDP, Exchange rate and money supply showing that lower SLR can enhance economic growth by increasing banks' lending capacity. This increases the amount of money circulating in the economy and leads to depreciation of the currency.
- Neither CRR nor bank rate has a relationship with inflation as measured by CPI.
- The multivariate regression analysis CRR, Repo Rate, and GDP shows that only CRR is a significant predictor of GDP.



www.ijprems.com editor@ijprems.com

INTERNATIONAL JOURNAL OF PROGRESSIVE
RESEARCH IN ENGINEERING MANAGEMENT
AND SCIENCE (IJPREMS)e-ISSN :
2583-1062(Int Peer Reviewed Journal)Impact
Factor :
5.725

The VAR analysis reveals strong relationships between the SLR and Reverse Repo Rate, particularly with the SLR having a major impact on the latter.

5. SUGGESTIONS

- In order to get desired economic outcomes, the results emphasize the need of utilizing a variety of monetary policy tools. Some measures, like the bank rate and CRR, may be less useful on their own, while others, like the reverse repo rate and SLR, have a considerable influence on specific indicators.
- When raising the reverse repo rate, the RBI should proceed with prudence because it has an inverse influence on the GDP, money in circulation, and exchange rate. Increased reverse repo rates can reduce liquidity, which can hinder economic development even while they help to stable the currency and manage inflation. It is advised to take a balanced approach.
- It seems that the SLR is a potent instrument for affecting exchange rate, supply of money and GDP. Therefore, to control liquidity and stabilize the economy, particularly in times of economic uncertainty, policymakers may take into account making SLR modifications.
- The repo rate may be a useful tool for controlling liquidity, as seen by its substantial impact on the money supply. However, its low impact on other measures, such as GDP and CPI, implies that it should be used in conjunction with other instruments, rather than as the only tool for monetary policy.
- The RBI's policy framework need to prioritize these instruments, given the noteworthy adverse effect of the reverse repo rate on GDP and the robust influence of SLR on several metrics.
- The VAR analysis would suggest looking at concentrating on the variables with strong predictive capacity for policy changes like the GDP and Money Supply.

6. CONCLUSION

It is evident from this research that a one-size-fits-all strategy is inadequate for a dynamic economy such as India's. These outcomes highlight how essential it is to approach monetary policy in a balanced, data-driven manner, carefully weighing each tool's efficacy against the overall state of an economy. The research indicates that future of monetary policy lies in a more flexible, responsive framework—one that can swiftly adjust to the constantly shifting rhythms of both local and international markets. The policies guiding the economy must also change as the economy does, with an emphasis on timeliness, accuracy, and the sensitive balance between stability and growth.

7. **BIBLIOGRAPHY**

- [1] Bicchal, M. (2010). Monetary policy and inflation in India: A structural VAR analysis. Artha Vijnana, 53(3).
- [2] Salunkhe, B., & Patnaik, A. (2019). Inflation dynamics and monetary policy in India: A New Keynesian Phillips Curve perspective. South Asian Journal of Macroeconomics and Public Finance, 8(2), 144-179.
- [3] Abdullah, M. N., Parvez, K., & Tooheen, R. B. (2012). Impacts of monetary policy on inflation in Bangladesh. Global Disclosure of Economics and Business, 1(2), 38-54.
- [4] Ahmad, M. U., & Nasrin, S. (2017). An analysis of the effect of monetary policy changes on macroeconomic factors. Theoretical & Applied Economics, 24(2).
- [5] Srinivasan, N., Jain, S., & Ramachandran, M. (2009). Monetary policy and the behaviour of inflation in India: Is there a need for institutional reform?. Journal of Asian Economics, 20(1), 13-24.
- [6] Bhattacharya, R., & Patnaik, I. (2014). Monetary policy analysis in an inflation targeting framework in emerging economies: The case of India. India Macro Policy Review.
- [7] Singh, K. (2002). Inflation, economic growth and monetary policy in India: A macroeconomic analysis.
- [8] Mishra, S. (2011). Has Our Monetary Policy Been Successful In Checking Inflation?. International Journal of Research in Finance & Marketing, 2(5), 10-15.
- [9] Sagar, S., & Koli, L. N. (2019). A Study of Monetary Policy and its impact on GDP Performance (With reference to Indian Economy). Easy Chair Preprint, 2237.
- [10] Chaudhary, N. IMPACT OF INFLATION ON MONETARY POLICY OF INDIAN ECONOMY. International Journal of Research in Management & Social Science, 50.
- [11] SEKHAR, S. C. IMPACT OF RBI MONETARY POLICY ON INDIAN ECONOMY WITH SPECIAL REFERENCE TOCOVID-19 PERIOD.
- [12] Kaur, R., Khurjekar, S., Dharmadhikari, S. P., & Borawake, M. H. P. A Study of Change in Policies by the RBI for Controlling Inflation and Promoting Growth.
- [13] Mathur, H. P., & Singh, S. CHANGING ECONOMY VIS-A-VIS CHANGING MONETARY POLICIES: A STUDY TO ASSESS THE IMPACT OF RESERVE BANK OF INDIA (RBI) POLICIES OF INTEREST RATES AND EXCHANGE RATES.



www.ijprems.com editor@ijprems.com

INTERNATIONAL JOURNAL OF PROGRESSIVE
RESEARCH IN ENGINEERING MANAGEMENT
AND SCIENCE (IJPREMS)e-ISSN :
2583-1062(Int Peer Reviewed Journal)Impact
Factor :
5.725

- [15] Garg, R., & Gupta, S. (2013). Impact of monetary policy on Indian economy. International Journal in Management and Social Sciences, 1.
- [16] Bhirud, V. (2014). The Role of Reserve Bank of India in Controlling Inflation: Traditional or Beyond Monetary Measures?. Bhirud, Vibha, The Role of Reserve Bank of India in Controlling Inflation: Traditional or Beyond Monetary Measures.
- [17] Kaur, K. (2017). Monetary Policy Impact on Output. Asian Journal of Research in Business Economics and Management, 7(6), 182-198.
- [18] Ingale, P. (2012). A Study of Impact of RBI policy rates on inflation. *International Journal of Research in IT and Management*, 2(2), 978-987.
- [19] Misra, S. N. (2019). Repo Rate, Inflation and Growth: The Way Forward. *Indian Journal of Economics and Development*, 15(2), 327-330.
- [20] Kumari, A., Kumar, V., Brady, M., O'Regan, N., & Kumar, V. (2013). The Strategic Implication of Monetary Control: An Empirical Investigation of the Indian Economy. *Strategic Change*, 5(22), 327-338.
- [21] https://cpi.mospi.gov.in/Inflation_CurrentSeries_2012.aspx
- [22] https://www.themirrority.com/data/money-supplym3#:~:text=The%20supply%20of%20money%20(M3,223%2C438%20billion%20in%202022%2D23.
- [23] https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=IN
- [24] https://www.rbi.org.in/
- [25] https://iced.niti.gov.in/economy-and-demography/key-economic-indicators/gdp