A Study of Monetary Policy and its impact on GDP Performance (With reference to Indian Economy)

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Abstract

For maintaining stability and growth in the economy, every nation has to maintain good structure of monetary policies for achieving the country's development goal. Monetary policy affected through various scales like money supply, interest rates, and inflation rate according to these indicators monetary policies dynamically changed to maintain price stability and required economic growth rate. There is very close relationship of GDP with Monetary Policies of the country for Economic Growth. Every Country needs to maintain good balance between contractionary and expansionary method of applying monetary policies, because adopting only one type of monetary policies could results in failing to achieve other targets such as Price stability, and Inflation, both are necessary to maintain Economic growth in the country.

GDP Referred to national income of the country which determines the economic growth of the country and it depends upon the Monetary policy, so it is very important function to establish good balance between monetary and GDP of the country. The present paper emphases on the impact of monetary policies on the GDP, for this associated variable also have been studied for proving hypothesis.

The duration of the study is from year 2014-15 to 2018-19, descriptive analysis, correlation and regression has been done to conclude remarks, and analyzes the influence of Monetary policy on GDP. Secondary data has been taken from RBI monetary policy reports.

Keywords: Monetary Policies, Gross domestic Product, Money supply, Interest Rate, Inflation Rate.

Introduction

For a long time, the connection between monetary development and inflation has been one of the most broadly explored studies in macroeconomics. In economics, inflation is characterized as the increment in the degree of costs and economic development and is normally characterized as the Gross Domestic Product (GDP). It gauges the market estimations of a nation's last products in a predefined period: GDP here refers to the = Consumption + Investment + Government Expenditure + Net (Exports – Imports).

An expansion in inflation suggests that expenses have gone up. With an ascent in expansion, there is a decrease in the acquiring influence of cash, which diminishes utilization and in this way GDP diminishes.

High inflation can make ventures less alluring, since it makes vulnerability for the future and it can influence the national payment (BOP) since sends out become increasingly costly. Therefore, GDP is diminishing further. Thusly, apparently GDP is contrarily identified with inflation. In any case, there are contemplates showing that there may likewise be a positive relationship. The Phillips bend, for instance, shows that high swelling is predictable with low paces of joblessness, inferring that there is a positive effect on Economic growth.

As indicated by standard political economy hypothesis, an expansion in the quantity of cash should bring down the loan fees in the economy, prompting more utilization and loaning/getting. In the short run, this should, anyway doesn't continually, partner to a development in complete yield and spending and, evidently, GDP is an imperfect depiction of financial effectiveness and wellbeing, anyway ordinarily, higher GDP is more wanted than lower. Rising monetary efficiency will build the value of money available for use since each unit of cash will a short time later be recorded for extra significant product and administrations. An expansion in inflation implies costs have gone up. With an ascent in inflation, there is a decrease in the buying, influence of cash, which diminishes utilization and in this way GDP diminishes. Accordingly, GDP is diminishing further, so apparently GDP is contrarily identified with inflation. India has slipped one indent at interims the globe Bank's Gross Domestic Product (GDP) rankings in 2018, and is as of now the seventh-biggest economy with the UK and France in front of India, information from the universal money related association previously mentioned.

Review of literature

(Rakesh Mohan, 2018) Indian Monetary Policy in the Time ofInflation Targeting and Demonetization The research paper focused on the narrative events, from year2009 to 2013, the study considered the introduction of first time monetary policy transmission launched during year 2013 to 2014, agreement took place between Government of India and RBI with effect of this Flexible inflation targeting system was adopted in year 2016 demonetization phase came during this phase how monetary policy instruments regulated and maintain to combat with the situation.(Lopez-Buenache, 2018)The evolution of Monetary Policy Effectiveness under Macroeconomic Instability the study talks about the Monetary Policy Transmission mechanism in the period of Great Recession, what techniques and Models adopted to control, and regulate the flow of Billion Dollars, results of the study shows in Year 2008 there was higher response in the Economy which is well maintained through Monetary Policies.

(Francesco Bianchi, 2018)The Dire Effects of the Lack of Monetary and Fiscal Coordination

Sometimes monetary and fiscal policy could not be applied blindly to combat inflation. The coordination has to be present in both policies, so that commercial bank will follow up the regulation and amendments one by one. It is found that policy mix is not well coordinated, which reflects the disagreement between the two authorities for example, for taking decision in relation to inflation there are many alternatives which could be implemented by authorities but "Inflation should or not be used to stabilize debt" going in different two directions which ultimately leads to explosive dynamics for inflation output and debt.

(Christian Friedrich, 2018)Monetary Policy and Financial Stability: Cross-Country Evidence The study explains the group of responses by central banks to maintained Financial Stability in the nation, which is reflected by risk based Financial Stability Orientation (FSO) contains the legal, framework, and components of central banks with view of monetary policies. The study shows the results for the selected cross-country reveals that the central banks with high FSO increase their monetary policy rates in accordance to mitigate financial stability risks by 0.27%, more than the central banks with low orientation.

Economic Performance Indicators under Different Monetary Policy Frameworks: Evidence from India (Madhvi Sethi, 2019)The objective of the paper is to analyses the performance of economic variables under various money related strategy structures in the post-independence period. The financial exhibition pointers utilized in the study are inflation and output Investigating the month to month information from April 1982 to March 2017, the study reveals that the multiple-indicator and the inflation-targeting regimes have had most success in balancing the twin objectives of growth and inflation.

Need of the study

Researcher finds gross domestic product (GDP) is the important aspect in formation of economy of the country. There are various studies have been done which are based on the monetary policy. Some studies based on comparing the GDP performance with monetary indicators; some based on analyzing the effect of interest rate and inflation on GDP not included money supply,and least for monetary policy framework in Indian context. However, no such study focuses on the three main indicators, money supply, interest rate and inflation, which affect GDP in different ways. Therefore, researcher carried out the research on title "a study of monitory policy and its impact on GDP

performance".

Objective of the study

To find and analyze the impact of interest money supply and Inflation on gross domestic product of India.

Hypotheses

HO= There is no significant impact of selected macroeconomic variable on gross domestic product

HO1= There is no significant impact of interest rate on GDP.

HO2= There is no significant impact of money supply (M2) on GDP.

HO3= There is no significant impact of inflation rate on GDP

Data Collection

In order to check impact of interest rate, money supply and inflation on gross domestic Product ofIndia. The data are collected from year 2014 to 2018. Which is collected through RBI statistical report

Variables

For analyzing the impact of selected macro-economic variable on GDP. We have to understand each variable relationship with GDP.

GDP

Which is referred to the sum of all goods and services produced within the geographic boundary of nation during the year.

M 2(Money Supply)

It is the total amount of money available in the economy in the particular time interval.

Inflation

Increase of paper money is the increase in the prices of goods and services over time. It is a science to do with the producing, distribution, and using up of goods and work supply stretch of time that means you have to use up more to put in your gas moving armor with guns, give money for a gallon of milk, or get a haircut. Full of air increases your price of living. Increase of paper money gets changed to other form the getting something for money power of each unit of money used in a country.

·Interest rates

The Bank rate, also experienced as the amount taken off a price rate, is the rate of interest requested by the RBI for making ready funds or loans to the banking system.

Data analysis and interpretation

For analyzing the relationship in relation to responsive variable GDP. For predictor's variables, a regression model has been developed

Table 1:Regression model statistics for GDP and selected Macroeconomic Variables

YEAR	GDP	MONEY SUPPLY) M2	INFLATION (INF)	INTEREST RATE (INT)
2014	7.40	77.89	5.88	10.25
2015	8.10	78.01	4.97	9.70
2016	7.10	74.69	2.49	8.20
2017	6.60	74.12	4.85	7.90
2018	7.30	73.49	7.65	8.05

Source: -RBI Reports
Ho= There is no significant impact of selected macroeconomic variable on gross domestic product

Table 1.1: Regression model statistics for GDP and Interest rate

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.793[a]	.628	-.487	.66238	.628	.563	3	1	.725
a. Predictors: (Constant), INT, INF, MS									

In the above table R = .793 which explains that there is strong relationship of responsive variable GDP with Interest rate, money supply, Inflation. R square refer to the coefficient of determination is at .628 means approximate 62.8% responsive change in dependent variable is due to change in selected macroeconomic variables, the other 37.2% change in GDP due to other macroeconomic variables

. Significant p value is at .725, which is more than 0.05 level of significance hence in this case null Hypothesis is accepted.

H_1= There is no significant impact of interest rate on GDP.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.690[a]	.476	.301	.45396	.476	2.726	1	3	.197

a.   Predictors: (Constant), interest rates

In the above table R = .690 which explains that there is strong relationship of responsive variable GDP with Interest rate. R square refer to the coefficient of determination is at .476 means approximate 47.6% responsive change in dependent variable is due to change in Interest rate, the other 52.4% change in GDP due to other macroeconomic variables. Significant p value is at .197, which is more than 0.05 level of significance hence in this case null Hypothesis is accepted.

Table 2.2 : ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.562	1	.562	2.726	.197[b]
	Residual	.618	3	.206		
	Total	1.180	4			

a. Dependent Variable: gdp

b. Interpreters: (Constant), interest rates

In the above table Regression (sum of squares) is .562 which is lower than the Residual (sum of squares) p value is .197 comparing with 0.05, we find model of regression developed for GDP and interest is not significant.

Table 2.1: Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.722[a]	.521	.362	.43389	.521	3.268	1	3	.168

    a.   Interpreters: (Constant), Money supply

Table 3

Regression model statistics for GDP and money supply (M2)

H2= There is no significant impact of money supply (M2) on GDP.

In the above table R = .722 which explains that there is strong relationship of responsive variable GDP with money supply. R square refer to the coefficient of determination is at .521 means approximate 52.1% responsive change in dependent variable is due to change in money supply, which is more than the correlation of GDP with interest rate. Significant p value is at .168, which is more than 0.05 level of significance hence in this case null Hypothesis is accepted.

ANOVA [a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.615	1	.615	3.268	.168[b]
	Residual	.565	3	.188		
	Total	1.180	4			

a. Dependent Variable: gdp

    a.   Interpreters: (Constant), Money Supply

Table 3.1

Anova table. Residual value .565 which is more than regression sum of squares .615. Significant value 0.168 is also more than 0.05 level of significant, so we cannot reject null hypothesis and it reveal that model developed for GDP and inflation is not significant.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-6.488	7.630		-.850	.458	-30.770	17.793
	Money supply	.182	.101	.722	1.808	.168	-.139	.503

a. Dependent Variable: gdp

Table 3.2   H3= There is no significant impact of inflation rate on GDP

Regression model statistics for GDP and Inflation rate

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.165[a]	.027	-.297	.61854	.027	.084	1	3	.791

a. Interpreters: (Constant), inflation Table 4

b. Dependent Variable: gdp

In the above table, R is 0.165, which signifies the weaker co relation between GDP and inflation while R square is 0.27 or 27%, which determines that 27% change in GDP is due to the change in inflation rest 73% change in GDP is due to other Macro economic variables. As inflation goes upward or downward does not implies that GDP also change with that proportion. Because As we go for the adjusted R SQUARE which is negative at -297 or approx. 29% which describe that in the selected duration of the study inflation showing the weaker correlation which could be negative with increment of years.

Table 4.1

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.032	1	.032	.084	.791[b]
	Residual	1.148	3	.383		
	Total	1.180	4			

a. Dependent Variable: gdp
b Interpreters: (Constant), inff

Overall, significant impact can be seen through anovatable. Residual value 1.148 which is more than regression sum of squares 0.32. Significant value 0.791 is also more than 0.05, so we cannot discard null hypothesis and it can be said that model developed for GDP and inflation is not significant.

Conclusion

It is concluded at the end by analyzing the selected macro-economic variables impact on GDP by regression analysis, it is found that there is insignificant impact of interest rate, money supply M2 and inflation on GDP during the selected period of study. Inflation have insignificant impact on GDP. No doubt if inflation rises it tends to rise in GDP growth but in the selected period of study we find inflation have not much affect on GDP performance. That's why null hypothesis is accepted with more than 0.5 value that is .791 at another side we can also say that here inflation is acting like hindrances in the path of GDP growth as it causes rise in the prices of commodities and rates of interest, cost of investment. Money supply M2 and interest rate should also bs taken while computing the GDP growth. M2 and interest rate have insignificant impact on GDP, p value for interest rate .197. And M2 is.168thus it can be concluded that during the selected period there is no significant impact of these macro-economic variables on GDP.

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