

**Monetary and Fiscal Policy Coordination and their
Impact on Macroeconomic Variables: Empirical
Evidence from Post Reform Period in India**

ABSTRACT OF THESIS

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Dr. D. K. Yadav

Submitted by

Rabiya Javed

DEPARTMENT OF ECONOMICS
SCHOOL OF ECONOMICS & COMMERCE
BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY
(A CENTRAL UNIVERSITY)

Vidya Vihar, Raebareli Road, Lucknow-226025, (U.P.), India

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ABSTRACT

The first chapter covers introductory part of the research topic with a brief history of monetary and fiscal policies after the institution of RBI in 1935 in India. Further, it delves into the previous known relevant literature along with scope of the study. Research methodology will help to drive down the research to its respective chapter plans.

Economic stability and economic development are entwining concepts. Essential prerequisite for growth in Emerging Market Economies (EMEs) like India is the existence of price stability as well as output stability. Diversion from this path causes fluctuations and the tools used to overcome these distortions are monetary and fiscal policies. Hence, known as stabilization policy. The economic policy of India is subdivided into monetary policy and fiscal policy which affects the macroeconomic framework and financial markets. Monetary and fiscal policies have often been pursued in different countries in divergent directions. The main objective behind the adoption of monetary policy is to achieve low inflation to insulate the economy from output and price shocks. As against, fiscal policy has an upper hand towards high growth and employment. Whereas for monetary policy the major trade-off is between price and output stability, the trade – off for fiscal policy is between output stabilization and the distortions from tax and spending policies¹.

Fiscal – Monetary mix refers to the relative strength of the fiscal and monetary policy. A change in the mix is an approach which tightens one policy while easing the other in such a way that aggregate demand and in turn total output remain constant. For achieving an optimum policy mix consisting of macroeconomic objectives of economic growth and price stability, it is imperative that the two policies complement each other. However, the form of complementarity will vary according to the stage of development of the country's financial markets and exchange rate regimes.

Leeper (1991) classified a policy as active or passive, based on effects on debt. Active monetary policy targets inflation whereas passive monetary policy adjusts interest

¹ Lectures on Macroeconomics (Blanchard & Fisher, 1989)

rates in a way to bring debt within sustainable limits. Active fiscal policy spends ignoring debt levels, whereas passive fiscal policy adjusts taxes and expenditure to keep debt within sustainable limits. Unique equilibrium requires one policy to be active and the other to be passive. Determinate prices require one of the policies to be active and budget solvency condition requires one of the policies to be passive.

Policy Coordination in different time frames:-

Short-run: The key objective underlying in this time frame is the coexistence of financial and price stability.

Long-run: Policy coordination should aim at designing a balanced monetary-fiscal mix that is conducive to maintain the economy on its growth path.

Hence, two important fundamentals in the arena of coordination needs to be discussed; firstly, the optimum policy mix that can set the economy on sustainable growth path. Secondly, the different time frames making the policies effective. Normally, it takes longer time to alter fiscal stance as compared to monetary stance.

Pre – Reform Period: A Brief Prelude

With the institution of RBI in 1935, the framework for monetary and fiscal policy interface in India was articulated. After independence, the macroeconomic policy followed the path from fiscal neutrality to fiscal activism resulting in large developmental expenditures. This gave birth to heavy dependence on market borrowings and deficit financing. RBI was obliged to automatically monetize government deficits as India entered the initial phase of market maturity. The decades of 1950s and 60s saw a low level of financial intermediation. With low level of saving and investment in the economy, fiscal policy began to play major role in development plans. System of ad hoc treasury bills for the government was introduced in 1956. This led to automatic monetization of fiscal deficits as they were issued at low interest rate. The mis-match between government receipts and expenditures continued to widen over time that caused macro imbalances. Monetary policy was constrained by perpetual fiscal deficits. In 1964, Net Liquidity Ratio (NLR) for commercial banks

was introduced which was followed by the introduction of Credit Authorization Scheme (CAS) in 1965. This scenario began to change in the 1970s following nationalization of commercial banks in 1969 and consequent expansion of banking². While fiscal policy was handling social issues like poverty and inequality, monetary policy shifted from physical planning in the financial sector to credit planning in terms of direct lending of loans and credit rationing. High fiscal dominance and financial repression were the hallmark of 1980s. Another important development was the phenomenal growth in reserve money as policy focus shifted to broad money (M3), resulting into raising the cash reserve ratio (CRR) and statutory liquidity ratio (SLR) rates restricting overall liquidity. With implementation of recommendations of Chakravarty Committee Report (1985), there was a directional change in the conduct of monetary policy, changing from credit planning to monetary targeting with feedback as the basic framework, with M3 as the intermediate target in 1986. The increase in reserve money and the consequent expansion in money supply was due to Net Reserve Bank Credit to the government. This led to initiation of a process of coordination between monetary and fiscal policy which meant to reduce the fiscal burden on the former, attempt to activate money market to operationalize indirect instruments of credit control and so on. In India in the highly regulated regime of the pre-reform period, the flow of credit was directed to the desired sectors in consonance with the plan exercise and the administered interest rate regime impeded the functioning of market mechanism. This fiscal and monetary problem became a major contributing factor to the Balance of Payment Crisis.

Post – Reform Period: A Brief Overview

The economic reforms of 1990s emphasized on two aspects; fiscal discipline and a move towards market-based interest rates. RBI was given greater autonomy to play an active role in inflation control and exchange rate management. Since July 1991, the government has undertaken both macroeconomic stabilization programmes and structural reforms as two components of the economic reform package. The balance of payment crisis of 1991 recognised that mounting monetized deficit which was a

² The most important part of financial system, namely banks, became part of the government and rate of interest became part of plan process (Y.V. Reddy, 2018).

part of fiscal deficit as the core problem. Thus, the system automatic monetization through the issue of ad hoc treasury bills was replaced with a system of Ways and Means Advances (WMA). In 1993, there was switch to fully market determined exchange rate. Fiscal deficit of the government was financed by borrowings at market rate of interest. The administered interest rate regime was dismantled. Monetary policy emphasis shifted to indirect instruments of credit control. An appropriate legal, institutional and technological framework was mandated for regulation and development of money, government securities and foreign exchange market. In 1997, automatic monetization of government budget deficit policy was finally discontinued. The use of broad money as an intermediate target has been downplayed, but the growth in broad money (M3) continues to be used as an important indicator of monetary policy. The composition of reserve money has also changed with net foreign exchange assets currently accounting for nearly one-half. A multiple indicator approach was adopted in 1998 – 99. As the name suggests, this approach considered all the basic and important parameters of an economy, namely, inflation, growth, employment, banking stability and exchange rate³. A Liquidity Adjustment Facility (LAF) has been introduced during June 2000 to precisely modulate short-term liquidity and signal short-term interest rates. The LAF, in essence, operates through repo and reverse repo auctions thereby setting a corridor for the short-term interest rate consistent with policy objectives. It has emerged as a tool for liquidity management and signalling of interest rate in the market. The RBI has also been able to use open market operations effectively to manage the impact of capital flows in view of the stock of marketable Government securities at its disposal and development of financial markets. This process made interest rate as an instrument of monetary transmission. This framework was strengthened in May, 2011 when the weighted average overnight call money rate was explicitly recognised as the operating target of monetary policy and the repo rate was made the only one independently varying policy rate (Mohanty, 2011). Another innovation that was brought to fruition was, namely, Debt – Swap Scheme. It enabled the state governments to swap their high cost loan from the Centre with market borrowings. Fiscal –monetary policy coordination was evident in another innovation; Market Stabilization Scheme (MSS). Under this, the operational autonomy of RBI in the exchange rate management was

³ Such a shift was gradual and a logical outcome of measures taken over the reform period since early nineties (Y.V. Reddy, 2002).

surrendered. It enabled the RBI to absorb and impart liquidity enhancing the degree of freedom of monetary policy. Greater coherence between monetary and fiscal policies was prompted by Fiscal Responsibility and Budget Management (FRBM) Act of 2003, which put in place targets for the government for strict adherence. Better management of public expenditure and taxation policy helped the central bank contain inflation at around 4 percent.

Post – Financial Crisis: Recent Developments

The global financial crisis of 2008 compelled coordinated fiscal-monetary stimuli in all countries. India witnessed its highest ever GDP growth at 11.4 percent in 2010. But the subprime crisis saw India embarking on excessive fiscal stimulus, which eventually led to inflation hovering around 10 percent. This reduced the purchasing power parity of rupee and caused it to depreciate against dollar. A disagreement between monetary and fiscal authorities emerged over how best to tackle inflation and growth together. The government did not impose fiscal discipline and fiscal responsibility rule targets were flouted⁴. In 2011, Central bank adopted new monetary operating procedure introduced with repo rate as the single policy rate with other rates linked to it in a corridor for interest rate determination. The causes that failed to spur GDP growth are policy paralysis, election uncertainties and supply bottlenecks. In recent past, inflation was still at double-digit levels and GDP growth was dismally low at 5 percent. Monetary policy in India again underwent a transformation in 2014, transiting to a flexible inflation targeting framework. Amendment to the RBI Act, 1934 came into force in June 2016. The amendment explicitly provided that the primary objective of monetary policy is to maintain price stability while keeping in mind the objective of growth. Another important landmark was the constitution of Monetary Policy Committee (MPC) with the objective to determine the policy rate required to achieve inflation target. Both fiscal and monetary stimuli in India were undertaken and supplemented by regulatory forbearance by RBI. Regulatory forbearance means policy that permits banks and financial institutions to continue

⁴ India, initially remained somewhat insulated to the global developments, but ultimately was impacted significantly through all the channels – financial, real and more importantly, the confidence channel (Subbarao, 2009).

operating even when their capital is fully depleted. This can be a root cause of NPA mess. RBI was adamant in withdrawal of stimulus. Fiscal authorities did not second this, leading to uncoordinated responses. Government invoked section 7 of the RBI Act questioning the very governance of RBI in 2018. The current interface is governed by a rule – based fiscal policy mandated by FRBM Act and rule-based monetary policy through amended RBI Act.

In the pre – reform period when there was automatic monetization of fiscal deficit which led to macro imbalances in the economy. High fiscal dominance prevailed in the Indian economy. So, increasing efforts through recommendations of various committees led to initiation of process of coordination between monetary and fiscal policy. From 1990s, various acts and schemes were introduced to support the autonomy of RBI in India. WMA Act was introduced in 1997 are temporary advances given by RBI to central and state governments to check the imbalances in receipts and payments. Debt – Swap Scheme was introduced in 2002 which enabled the state governments to swap their high cost loan from the Centre with market borrowings. FRBM Act in 2003 was introduced which kept the inflation rate at 4 percent and fiscal deficit at 3 percent. Market Stabilization Scheme was introduced in 2004 which enhanced the degree of freedom of monetary policy. It is through these acts and schemes that autonomy of RBI was maintained.

In the recent past, we have seen many instances in which there was direct attack on RBI's autonomy. This can be seen through increasing role of government dominance in India. All the financial sector decisions and announcements like demonetisation which happened in 2016 followed by introduction of GST were done by the government of India. Hence, RBI suffered greatly on these grounds. All the financial sector schemes being announced by the government and its monitoring is being done by the Ministry of Finance. Financial sector schemes like Pradhan Mantri Jan – Dhan Yojana (PMJDY), Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), Pradhan Mantri Suraksha Bima Yojana (PMSBY), Atal Pension Yojana (APY) and Pradhan Mantri Mudra Yojana (PMMY) were announced by the government. These financial schemes were to be announced by Reserve Bank of India but all these came through the government of India became a major challenge that questioned coordination between monetary and fiscal policy. Re – emergence of the government has led to the

problem of coordination in India. Hence, there is a crucial need to study about coordination of monetary and fiscal policy in post reform period in India.

Scope of the study

The dire need for policy coordination is two – fold; fulfilment of the overall policy objectives and institutional or operational procedures for the conduct of policies. Coordination at the operational level encompasses both macro (monetary programming) and micro (day – to – day implementation) frameworks. The mix of policy objectives, targets and instruments strongly suggests the need for a new face of coordination. However, the economy is confronting a new phase of fiscal dominance. It is imperative to study the policy interactions in India to understand their impact on macroeconomic variables and to be able to design future policies better. In the light of the recent monetary and fiscal policy actions, it has become important to understand how these policies respond to each other and how different policy mixes affect macroeconomic variables. This will ensure an optimum fiscal – monetary mix that is consistent with growth along with price and output stability.

This study is being conducted as there are lot of researchable areas which are lying vacuum in this field of monetary and fiscal policy coordination of developing country like India. There is utmost need to measure the conduct of policies. It is needed to formulate and evaluate the monetary and fiscal policy coordination in India. Moreover, assessing the impact of coordination of policies on the important macroeconomic variables. Therefore, the present study will throw light on these aspects which have not been covered so far altogether.

This study aims to solve the questions -:

- i. How has been the conduct of monetary and fiscal policy in post reform period in India?
- ii. Assessing the coordination of monetary policy and fiscal policy in terms of objectives, instruments, variables, monetary policy index and fiscal policy index.

- iii. Which sub - period of the Indian economy has shown coordination or no coordination?
- iv. How does the coordination of policies affect macroeconomic variables in India?

Objectives

The objectives of the study are as follows -:

- i. To examine the conduct of monetary policy in the post reform period.
- ii. To examine the conduct of fiscal policy in the post reform period.
- iii. To measure the extent of coordination of monetary and fiscal policy in the post reform period in India.
- iv. To evaluate the impact of coordination between the policies on the performance of macroeconomic variables.
- v. To suggest suitable mechanism for ensuring proper coordination between fiscal and monetary policy.

Hypothesis

The above outlined objectives can be achieved with the help of following hypothesis stated below -:

- i. The conduct of monetary policy in the post reform period was as per the requirement of the economy.
- ii. The conduct of fiscal policy in the post reform period was as per the requirement of the economy.
- iii. There is lack of coordination between monetary policy and fiscal policy.
- iv. Due to lack of coordination, macroeconomic variables are affected adversely.

- v. An autonomous apex body can ensure proper coordination between fiscal and monetary policy.

Research Methodology

Exploring from the existing literature (both theoretical and empirical), it is desirable to undertake measurement of policy coordination and an assessment of the impact of the fiscal and monetary policy coordination on macroeconomic variables. The focus of study is Indian Economy in the post – reform period. Time series data spanning from 1990 – 91 till 2019 – 20 will be taken. We have delineated the thirty years’ time period into seven sub – periods based on prevailing economic conditions of Indian economy which are recessionary or non - recessionary; namely;

1. 1990 – 91 to 1992 – 93
2. 1993 – 94 to 1998 – 99
3. 1999 – 00 to 2002 – 03
4. 2003 – 04 to 2006 – 07
5. 2007 – 08 to 2011 – 12
6. 2012 – 13 to 2016 – 17
7. 2017 – 18 to 2019 – 20

Our methodology is subdivided into three parts; for measuring conduct aspect of the two policies, measuring coordination between monetary and fiscal policy and assessing the impact of coordination on macroeconomic variables.

Measuring Conduct of Policies: For measuring the conduct of policies, monetary index and fiscal index will be constructed. The aspects that need to be considered are selection of indicators and the weights assigned to them to formulate an appropriate index. Monetary policy variables, namely, money supply, interest rate and exchange rate will be taken. Fiscal policy variables, namely, total government expenditure, total

government revenue and total government debt will be taken. Simple weighted – sum approach will be used in which equal weight is assigned to each variable. The index thus calculated is a simple average of all the variables taken together. Another method of assigning weights is based on the relative impact of each variable on real GDP. The former method will be used in this study. Index will measure the conduct or performance of monetary and fiscal policies.

Monetary Index at time period t can be written as -:

$$MI_t = w_m (m_t - m_0) + w_r (r_t - r_0) + w_e (e_t - e_0);$$

Similarly, we construct fiscal index as:

$$FI_t = w_{ge} (ge_t - ge_0) + w_{gr} (gr_t - gr_0) + w_{gd} (gd_t - gd_0)$$

Measuring Coordination of Monetary and Fiscal Policy: Coordination between the two policies in India can be measured over the period from 1990 – 91 to 2019 – 20 by following twofold steps. Firstly, stationarity test will be conducted on the select variables undertaken in the study. Secondly, output stability and price stability are the main indicators of a prosperous economy. Shocks to these indicators will represent the macroeconomic imbalance which will imply necessitating effective coordination of policies. The table labelled as Macroeconomic Environment Matrix are four possible combinations of positive (P) or negative (N) shocks to output stability and price stability⁵

Macroeconomic Environment Matrix

		Inflation	(Price Stability)
		Positive (P)	Negative (N)
GDP Growth	Positive (P)	PP (+ +)	PN (+ -)
(Output Stability)	Negative (N)	NP (- +)	NN (- -)

⁵ P – Positive Shock is defined as increase in GDP and decline in price level.

N – Negative Shock is defined as decrease in GDP and increase in price level.

The upper left corner shows positive shocks to both output and price stability while the extreme lower left corner refers to the negative shocks to both output and price stability. The other two cells show mix of both types of shocks. According to these shocks which prevailed in the Indian economy, we divide the time period from 1990 – 2020 into four quadrants.

Quadrant 1 - The first quadrant is defined as **Expansionary Phase** (++)). In this cell, when GDP increases due to positive shock there is decline in price level also.

↑ GDP & ↓ P

Quadrant 2 – The second quadrant is defined as **Recovery Phase** (+-). This shows increasing GDP growth rate (positive shock) with increase in price level (negative shock).

↑ GDP & ↑ P

Quadrant 3 – The third quadrant is defined as **Recessionary Phase** (-+). This brings out decline in GDP growth rate due to negative shock alongwith decline in price level due to positive shock.

↓ GDP & ↓ P

Quadrant 4 – The fourth quadrant is defined as **Stagflation** (--). This last quadrant is defined as both negative shocks which result into decline in GDP growth rate and increase in price level.

↓ GDP & ↑ P

The following policy response matrix is constructed which shows that countercyclical policies are adopted in order to combat different shocks.

Policy Response Matrix

		Monetary Policy	
		Contraction (C)	Expansion (E)
Fiscal Policy	Contraction (C)	CC	CE
	Expansion (E)	EC	EE

Hence, each cell in this matrix represents the appropriate policy mix which is adopted to counter shocks in the macroeconomic environment matrix. For example, in the first cell, the appropriate policy mix that respond to positive shocks to both output and price stability is mix of contractionary monetary and fiscal policies.

Coordination will be measured with this formula -: $p = \Omega / t$
 where p = extent of coordination, t = number of years taken in the study

$$\Omega = n (PP \cap CC) + n (PN \cap CE) + n (NP \cap EC) + n (NN \cap EE)$$

The value of p ranges from 0 to 1 where, if p = 0 means no coordination

And p = 1 means perfect coordination

Measuring Impact of Coordination on Macroeconomic Variables: The present study will take data of seven macroeconomic variables namely; GDP growth, Inflation, Exports, Imports, Investment, Saving and Unemployment. Stationarity test will be conducted on the select macroeconomic variables. If the data is found to be integrated of order one then cointegration test will be conducted. Data Analysis will be done on Stata. The impact of coordination on the macroeconomic variables will be shown by Dummy Variable Regression Model.

Sources of Data:

Secondary sources of yearly time series data set from 1990 – 2020 will be taken. The data of variables; money supply, interest rate, exchange rate, government expenditure, government revenue and government debt are collected from secondary sources like Handbook of Statistics on the Indian Economy (www.rbi.org.in), National Account

Statistics of the Central Statistical Organisation (CSO), Indian Budgetary documents, SEBI, Economic Surveys and various issues of monthly bulletin of RBI. Other sources include “Monthly Abstract of Statistics” by Ministry of Statistics and Programme Implementation (MOSPI), Government of India (www.mospi.nic.in) and Comptroller and Auditor General of India (www.cga.gov.in) and World Bank.

The Present Thesis is Compartmentalised into Seven Chapters -:

Chapter first is entitled as “Introduction” which gives us an insight on thesis topic covering the research questions paving way for the objectives and consequent hypothesis of the study. It tells us about the research methodology adopted in this thesis followed by the sources of data and name of chapters framed to complete this thesis.

Chapter second is entitled as “Conceptual and Theoretical Framework” is a blueprint of this thesis. It is based on the conceptual and theoretical dimensions of coordination of monetary and fiscal policy in India. We have tried to cover most of the pertinent concepts and theories related to coordination of monetary and fiscal policy in post reform period in India.

Chapter third is entitled as “Nature and Conduct of Monetary Policy in India” which tells us about the conduct aspect of monetary policy in India. The following analysis is done sub period wise. This is measured through the empirical estimation of monetary Index. The three monetary variables undertaken in this study; money supply, interest rate and exchange rate are taken to measure Monetary Index (MI). Proxy variables are assigned for these monetary variables like narrow money is taken for money supply, real interest rate for interest rate and value of exchange rate for exchange rate. Firstly, we have analysed the six instruments; namely; bank rate, repo rate, reverse repo rate, marginal standing facility, cash reserve ratio and statutory

liquidity ratio theoretically sub – period wise and have linked it with the variables of monetary policy and the prevailing economic conditions. Secondly, we have analyzed the six instruments and three variables **empirically** by checking their interdependence through Multiple Regression Model. The objective framed for this chapter is to examine the conduct of monetary policy in the post reform period in India.

Fourth Chapter is entitled as “Working and Effectiveness of Fiscal Policy in India”

deals with the construction of fiscal index, three fiscal variables are taken namely, total government expenditure, total government revenue and total government debt. The proxy variables assigned for these fiscal variables are all taken in terms of percentage of GDP; total government expenditure, total government revenue and total government debt. This measure will show the conduct of fiscal policy in post reform period in India. The objective framed for this chapter is to examine the conduct of fiscal policy in the post reform period in India.

Fifth Chapter is entitled as “Measuring Coordination of Monetary and Fiscal Policy in Post Reform Period in India”

where coordination between monetary and fiscal policy is measured. The objective framed for this chapter is to measure the extent of coordination of monetary and fiscal policy in the post reform period in India. The hypothesis framed is there is lack of coordination between monetary and fiscal policy. The data on two variables is taken in order to construct Macroeconomic Environment Matrix of India for a period of three decades. We have taken two proxy variables of monetary policy and fiscal policy each denoting monetary and fiscal conditions respectively. Monetary Index and Fiscal Index are the variables showing monetary and fiscal conditions respectively. On the basis of these two variables, the following policy response matrix is constructed which shows that countercyclical policies are adopted in order to combat different shocks.

Chapter sixth is entitled as “Impact of Coordination on the Performance of Macroeconomic Variables in Post Reform Period in India” shows how the coordination coefficient is affecting the real macroeconomic variables. Our objective is framed as to evaluate the impact of coordination of policies on the performance of macroeconomic variables. Hypothesis is given as due to lack of coordination; macroeconomic variables are affected adversely. The coordination between the policies influences parameters of the economy like unemployment, savings, investment, balance of payment, GDP and inflation. We have taken Dummy Variable Regression Model to show impact of coordination of policy on macroeconomic variables. This chapter also caters to the final objective framed as to suggest suitable mechanism for ensuring proper coordination between fiscal and monetary policy.

Seventh Chapter is entitled as “Conclusions and Policy Prescriptions” summarizes the whole thesis. From the conclusions, we have drawn out the policy prescriptions to combat the issue of coordination of monetary and fiscal policy in post reform period in India. After policy recommendations, we have listed out the limitations of the study.

Policy Prescriptions

From the findings and conclusions highlighted above, we have drawn out the policy prescriptions in order to combat the issue of coordination of monetary and fiscal policy in post reform period in India. We have analyzed the nature of monetary and fiscal policy through examining the conduct of monetary and fiscal policies by computing the monetary index and fiscal index. We found out that the conduct of both the policies was as per the requirement of the economy. We found out from our analysis that there is lack of coordination in the post reform period in India. Only nine years out of total thirty years showed coordination between the policies while rest of the twenty – one years showed no coordination between the two policies. For

improving the coordination coefficient between monetary and fiscal policies, coordination committees or agencies should be set up in India. For the Indian economy in the post reform period, there has been several episodes showing lack of coordination between the policies. We have seen monetary authority is focusing on policies to ensure price stability and strengthen the Central bank independence. Similarly, the fiscal authority is focusing on cost minimization of public debt. For the maintenance of good economic performance in the long run, the divorce between the monetary and fiscal authority should lessen paving way for effective coordination. Coordination committees need to be set up including the officials of Ministry of Finance and the Central bank should be set up to discuss and analyze the liquidity and market developments of the economy.

Policy coordination should be framed at two levels -:

1. **Macro level** – Monetary and fiscal policy programs should be implemented in preventing inconsistencies in the optimum policy mix.
2. **Micro level** – relates with management of cash balances of the government, the level of central bank credit to the government and maintaining the level of liquidity circulating in the Indian economy.

Our last analysis showed there is positive impact of coordination of policy on all seven macroeconomic variables as the coefficient values were all positive. However, the policy coordination came out significant in case of two macroeconomic variables; GDP growth and Unemployment rate only. The rest five macroeconomic variables recorded insignificant policy coordination values. So, we can prescribe that there is an increasing need to improve coordination between policies and coordinating agencies should specially emphasize on these five macroeconomic variables; namely; inflation, exports, imports, investment and saving.

In order to fulfill the foremost goal of macroeconomic policy which is price stability and output stability, close degree of coordination of monetary and fiscal policy between the officials of the two institutional arrangement is strongly needed. The repercussions of not having efficient coordination of policies are instability of financial sector which will give rise to instability in interest rates and exchange rates

leading to rapid inflation and deterioration of economic growth and development. Low economic performance of an economy is associated with lack of coordination. If one policy is weak then it will put pressure to tighten the other policy and it will result into inconsistent policy mix. There is a need to undertake policy coordination at two different levels. Firstly, the short – term constraints regarding the operating procedures of monetary and fiscal policy. Secondly, policy coordination should see the unbalanced policy mix will result into severe macroeconomic effects. Policy coordination will design an optimum monetary and fiscal policy mix that will help in keeping the growth rate of the economy at equilibrium path. Hence, designing a suitable policy mix for maintaining healthy balance in the economy which can be pursued in two ways as done by controlling inflation and promoting financial conditions for sustainable growth.

A balance coordination is desirable between the two institutional arrangements. Extreme level of coordination might actually make things worse for the economy. There are two sides of a coin where on one side coordination is directed to achieve the goals of stabilization policy which implies price stability alongwith sustainable economic growth and balance of payments. On the other side of the coin, there is lack of coordination of these policies will lead to financial instability, dragging it with an increase in interest rates, the pressure on the exchange rate, inflation, and ultimately will have a negative impact on economic growth. This inconsistent and uncoordinated policy – mix leads to poor economic performance of an economy, which ultimately strongly confirms the importance or need of coordination. Therefore, an institutional arrangement or an apex body is strongly needed to establish coordination between both monetary and fiscal institution; RBI and Central Government in India.

Lastly, there is increasing need to develop a threshold level of coordination between monetary and fiscal policies for the Indian economy. This will prevent inconsistencies in policy making like managing the cash balances of the government, central bank credit to the government and forecasting the liquidity circulating in the economy. Moreover, it will help macroeconomic variables to achieve sustainable economic growth. Hence, close degree of coordination between monetary and fiscal policies is essential to achieve efficiency in the economy for sustainable development.

Limitations of Study

The most important macroeconomic adjustment is the monetary – fiscal coordination. The coordination of monetary policy and fiscal policy is a difficult key challenge for all EMEs where exist synergies and trade – off between price stability and financial stability. The solution to the problems relating to the role of market power (this will impact aggregate supply) and inequality (impacting aggregate demand) in fiscal policy and monetary policy decision – making are addressed properly, then the imbalance between the two policies is restored⁶. Therefore, efforts should be made to calculate or formulate the potential welfare from improving fiscal and monetary policies to attain an “optimal” stabilization policy. A healthy coordination of monetary policy and fiscal policy will ensure faster growth of Indian economy. Moreover, if we get the division of labour right between the government and the RBI, India can have both growth and macroeconomic stability. Formulating monetary policy and fiscal policy is an ever – evolving process both in response to and as a consequence of changes in financial markets and the real economy.

In this study, there is only thirty years’ time series data been taken which is a major limitation of this study. Another limitation is a smaller number of macroeconomic variables been taken in the study. There is very limited literature available in respect of establishment of coordinating agency in different countries. Moreover, very less methods and methodology are available in order to assess and calculate the coordination coefficient. There is very smaller number of studies and research conducted on coordination of monetary and fiscal policy. The models which we have adopted in this study may not be sufficient tools in order to assess coordination of monetary and fiscal policy in India or any other emerging market economies. Hence, we cannot justify all aspects related to coordination of policies. Therefore, attempts should be made to increase the number of years with large number of macroeconomic variables. New methods and econometric techniques should be devised in order to calculate the coordination coefficient. Therefore, attempts should be made to increase the number of years with large number of macroeconomic variables.

⁶ Phrase written in a blog by Kalecki

Relationship between monetary and fiscal policies represents one of the most important topics in today's time and good policymaking will always benefit from cutting – edge research. In view of the complex nature of interface, coordination between fiscal and monetary policies has to be considered from several angles. Hence, firstly, the question is whether the relevant fiscal – monetary policy mix is conducive to the macro objectives. The relevant policy mix relates to the level of fiscal deficit, pattern of financing especially the extent of monetization and dependence on external savings. Secondly, whether operating of monetary and fiscal authorities, especially debt and cash management are consistent and mutually reinforcing. Thirdly, whether credibility of both monetary and fiscal policies is achieved in a desirable direction. Fourthly, the fact that monetary and fiscal policy adjustments operate in different timeframes should be duly recognised. Monetary policy can be adjusted to alter monetary conditions at a shorter notice than fiscal policy. Finally, congruence implementation of policies may require that one policy is not unduly burdening the other for too long. Mutual respect and reinforcement is undoubtedly the ideal to which both policies and authorities should adhere.

Concluding with this advice “Don't live beyond your means”, be responsible spenders and keeping the gap between spending and earning as low as possible. With the advent of macroeconomic adjustment lately, monetary – fiscal coordination should be the key underpinning for the Indian economy. After struggling with continued high inflation and bloated current account deficit, we need to internalize the lessons from the Lehman Brothers crisis. The government should focus on fiscal consolidation and moving the supply curve out by reforming and liberalizing India's factor markets. This is the best initiative we can make towards future growth. Monetary policy should ensure that real rates for savers remain positive so that any growth pick – up is financed domestically without any burden. If we get the division of labour right between the government and the RBI, the country can have both growth with macroeconomic stability. Otherwise, we will always face trade – off between one or the other.