Chapter - I

INTRODUCTION

1.1 Background of the Study

Monetary and fiscal policies are the two key instruments used by central banks and governments. Monetary policy refers to the actions taken by the central bank to regulate the supply of money and credit in the economy, while fiscal policy is used by the government to control economic activity through spending and taxation.

The main objective of these macroeconomic policies is typically to establish a sustainable macroeconomic climate that features stable and positive growth along with low and stable inflation rates. The essential purpose is to fundamentally guide the economy to prevents economic upswings that can lead to extended periods of low or negative growth and elevated levels of joblessness. A stable economic environment empowers individuals to make confident spending and saving decisions, while businesses concentrate on making investment decisions, meeting their bondholders' coupon payments, and delivering profits to their stakeholders (CFA Institute, n.d.).

It is evident that both of these policies function within the context of macroeconomic goals, such as full employment, price stability, and a sustainable economic growth.However, the primary goal of fiscal policy is to minimize unemployment by fostering a situation where all the available resources of the economy are utilized to produce more output. In contrast, the central focus of monetary policy is price and exchange rates stability to ensure strong macroeconomic fundamentals.

Economic theory postulates that these two goals of the two policies are not mutually exclusive. For instance, while monetarists regard inflation as a purely monetary phenomenon, the Fiscal Theory of the Price Level (FTPL) demonstrates that inflation can be be a fiscal phenomenon rather than monetary when the inter temporal budget constraint is treated as an equilibrium condition (Bassetto, 2008). The FTPL is based on the concept that the government pledges to a constant and predetermined amount of primary fiscal surpluses, which is a particular instance of an "active" fiscal policy as described by Leeper (1991) and "Non-Ricardian" fiscal regime as explained by Woodford (1995).

Moreover, Sargent and Wallace (1981) in his paper titled "Some unpleasant monetarist arithmetic" have shown that even an independent central bank can lose control over its monetary policy in a fiscal dominant regime. This is indicative of the way in which both policies function within a macroeconomic environment that is characterized by interplay among different policies and macroeconomic variables.

Additionally, the question of the optimal mix and efficiency of the two policies has been a subject of constant debate among macroeconomists with no clear established conclusion. The classical and new classical schools of thought maintain that a free market system operates effectively without policy interventions. Conversely, the Keynesian school of thought advocates for the use of fiscal policy during recessions due to the perceived inefficiency of monetary policy in stimulating economic growth. The monetarist school of thought takes the opposite stance, arguing that monetary policy is a more effective policy instrument.

The debate among economists over the effectiveness of macroeconomic policies has not been limited to just the choice between monetary and fiscal policies. It also extends to the question of whether a rule-based policy is more effective than a discretionary policy. Some economists, such as Barro and Gordon (1983) and Kydland and Prescott (1977), argue in favor of a rule-based policy as an optimal policy. They suggest that a pre-determined set of rules can lead to better economic outcomes compared to discretionary policies. On the other hand, most Keynesian economists believe that discretionary policies provide more flexibility and allow policymakers to respond more effectively to unforeseen economic shocks.

Furthermore, the interaction between these two policies extends beyond policy goals and into the realm of monetary-fiscal instruments. For example, an expansionary fiscal policy on account of increased government expenditure can possibly lead to increased interest rate as government competes with private sector for the limited funds in the market.

Therefore, it can be stated that the complexity of these policies requires a deep understanding of the interrelationships between economic variables and the efficiency of policy tools, as well as the ability to anticipate and respond to changes in the macroeconomic economic environment.

The discourse surrounding the role of monetary and fiscal policy in economic stabilization and growth has persistently been a focal point of macroeconomic policy research. Nevertheless, the urgency of this discourse has been amplified in recent

times, particularly in light of the economic challenges that surfaced following the global financial crisis of 2008-2009. Countries across the globe deployed a blend of expansionary monetary and fiscal policies as part of their economic recovery strategies in response to the subprime crises of 2008. These crisis elicited responses from monetary and fiscal policies collectively than any other economic crisis since World War II. Accordingly, to grasp the implications of these policy measures, a joint analysis of both monetary and fiscal policies is required (Davig and Leeper, 2011). Nonetheless, the question of whether these policy actions were executed in synchronization or contention is still a topic warranting further inquiry (Arora, 2018) .

Additionally, the eurozone debt crises that emerged in 2015 underscored the criticality of a viable and sustainable fiscal policy framework in a monetary union (Wickens, 2016).The crises demonstrated that a lack of such framework could lead to financial instability. Furthermore, since the fiscal variables can significantly influence the monetary policy reaction function, understanding the impact of fiscal policy variable becomes a key consideration for policymakers.

Therefore, effective coordination of monetary and fiscal policies is essential for achieving these objectives, and policymakers must carefully balance the trade-offs and potential risks associated with each policy tool. In the absence of coordination, the result can be a prisoners' dilemma type outcome where higher inflation and lower growth leading to reduction in the welfare of both parties (Goyal, 2018). Thus, making it important understand and study the dynamics between monetary and fiscal variables.

In India, both these policies are critical tools for the attainment of macroeconomic objectives. The Reserve Bank of India (RBI) formulates and implements monetary policy, while the Ministry of Finance manages fiscal policy through its budgetary policies.

In terms of the monetary and fiscal policy interactions, India makes an interesting case as it has experienced continuously evolving dynamics between monetary and fiscal policies.

The Balance of Payment cases of 1991 reflected the serious implication of high fiscal deficit on the economy. To address this issue, India implemented various economic reforms and moved towards an open economy redefining the exchange rate management role of monetary policy. Subsequently, reforms like elimination of automatic monetization of debt, deregulation of interest rate, shift to Liquidity Adjustment facility (LAF) and adoption of FRBM, Act 2013 have said to have decreased the fiscal dominance in India.

Further, India, being an emerging market economy, provides a rich economic environment to study the interaction between fiscal and monetary policies. India's economic growth, inflation, exchange rate, and balance of payments are some of the macroeconomic variables that are impacted by both fiscal and monetary policies.

Therefore, studying the effectiveness of these policies in India can provide valuable insights for policymakers to design effective policies that can achieve their objectives.

Furthermore, India's experience can also contribute to the academic literature on the effectiveness of fiscal and monetary policies in emerging market economies. As the research on monetary-fiscal interactions, both theoretical and empirical, has provided no definite conclusion and indicates diverse outcomes.

1.2 Motivation of the study

The interactions between fiscal policy and monetary policy are a complex topic, as the role of each respective authority has a different impact on the economy. Therefore, the type of relationship established by both authorities is important to determine how their policies will influence the levels of inflation and economic growth.

Monetary and fiscal policy implementation by distinct institutions does not guarantee policy independence (see Sargent & Wallace, N.,1981). These policies have interdependent objectives that affect each other. The existence of diverse economic theories on the interaction of monetary and fiscal policies with other macroeconomic variables has sparked considerable empirical research.

While advanced economies have seen much of the analysis (for example Muscatelli et al., 2002 and Antonio et al. 2019), the applicability of such studies to emerging market economies, such as India, is doubtful. These economies have varying institutional structures, legal frameworks, and market designs for the implementation of these policies. Furthermore, due to the evolution of econometric techniques, there is no unanimity on such policy interactions. Hence, country-specific investigations become essential.

India is a rapidly growing emerging market economy that has faced significant macroeconomic challenges in the past, including high inflation, large fiscal deficits, and a volatile external environment. The example of India's response to the 2009 downturn highlighted the need for a comprehensive understanding of the interactions between fiscal and monetary policies. While India's swift adoption of an expansionary fiscal and monetary policy helped mitigate the impact of the crisis, the subsequent implementation of three fiscal stimulus packages resulted in inflationary pressures. Consequently, the monetary policy response shifted from expansionary to contractionary, eventually leading to an economic slowdown around 2011. This underscores the importance of carefully assessing the long-term consequences of policy measures to achieve sustainable economic growth.

Today, the goal of achieving a 5 trillion-dollar economy for India necessitates the presence of macroeconomic stability as a crucial factor. This stability will play a pivotal role in promoting sustained economic growth and development by ensuring that the economy operates within reasonable levels of inflation, fiscal discipline, and financial stability. It will involve implementing policies and measures that ensure the stable functioning of financial markets, monetary policy, and government spending. Maintaining macroeconomic stability is critical for attracting domestic and foreign investment, creating jobs, and improving overall economic performance.

Additionally India, with its ever-changing policy dynamics, presents an interesting case study.

1.3 Overview of India's Monetary and Fiscal Policy

The Reserve Bank of India (RBI) was established in 1935 under the Reserve Bank of India Act. The RBI is a central bank with the primary responsibility of controlling the issuance of banknotes and preserving reserves to guarantee monetary stability in India, according to the Preamble of the Act. In accordance with the Act, the RBI also manages the nation's monetary and credit systems to its benefit (Reddy, 2007). This central bank plays a vital role in maintaining the stability and growth of the Indian economy by implementing monetary policy measures.

On the other hand, fiscal policies are guided by the Indian Constitution, which divides the taxing powers and spending responsibilities between the central and state governments. The Ministry of Finance is responsible for implementing fiscal policy through the annual budgetary process. However, since the government is responsible for this process, it is often driven by populist policies rather than sustainability criteria.

1.3.1 Evolution of Monetary Policy in India

Over the years, the evolution of monetary policy in India has gone through several phases, each marked by significant changes in the approach and tools used by the Reserve Bank of India (RBI) to achieve its objectives. The table 1.1 in Appendix A provides a summary of monetary policy regime in India from 1935.

In his speech titled "Seven ages of India's monetary policy," Das (2020) elaborated on the different stages of monetary policy in India. The various stages described are as follows:

The first phase of Indian monetary policy began in 1935 with the establishment of the RBI and the introduction of the gold standard. The Preamble to the RBI Act of 1934 established the foundation for the evolution of the monetary policy framework, as the emphasis was on maintaining sterling parity by regulating liquidity through open market operations (OMOs), in addition to the additional monetary instruments of bank rate and cash reserve ratio (CRR). The exchange rate acted as the nominal anchor for monetary policy throughout this time period. As a result of the economy's agrarian foundation, inflation frequently developed as a problem in response to supply-side shocks. The RBI used selective credit control and moral persuasion to prevent banks from lending credit for speculative purposes, as the government enacted price controls and rationing of essential items.. During this period, the RBI focused on controlling the quantity of money in circulation and maintaining the convertibility of the rupee into gold Das (2020).

India's economic history was transformed by the country's independence in 1947, which led to a policy of planned economic development and the second phase of India's monetary policy began. During the following two decades, the government assumed a significant role in the country's economic affairs, with a focus on achieving a socialistic pattern of society. To achieve this goal, the government intended to strengthen indigenous capacity, minimize income disparities, stimulate small and

large-scale companies, maintain balanced regional development, and prevent economic power consolidation. The government played an entrepreneurial role in the growth of the industrial sector by establishing public sector enterprises Das (2020).

Monetary policy during this planned economic development phase was geared toward the requirements of five-year plans, emphasizing credit allocation to productive sectors. Even though there was no formal structure, monetary policy was relied upon to manage the economy's credit supply and demand. Policy mechanisms used to limit credit availability included the bank rate, reserve requirements, and open market operations (OMOs). With the adoption of the Banking Regulation Act in 1949, the statutory liquidity ratio (SLR) requirement emerged as a reliable source for government borrowings and as an extra tool for monetary and liquidity management. Throughout the post-independence period, inflation was mild, but it became a concern from 1964 to 1968 Das (2020).

During this phase, the RBI began to use monetary policy to support economic development goals, such as achieving high growth rates and promoting industrialization. The RBI also began to use credit controls, such as selective credit controls and direct controls on interest rates, to allocate credit to priority sectors Das (2020).

Between 1969 and 1985, India's monetary policy framework witnessed a considerable transformation. The nationalization of large banks in 1969 was a pivotal moment in the formation of monetary policy. Nationalization's primary objective was to make credit available to a greater variety of individuals and activities.This triggered a

significant increase in the money supply as a result of credit expansion, which made it difficult to strike a balance between financing economic growth and maintaining price stability. The Indo-Pak conflict in 1971, drought in 1973, global oil price shocks in 1973 and 1979, and the breakdown of the Bretton Woods system in 1973, which had inflationary effects, all aggravated the situation. The concerns of high inflation caused by deficit financing during the 1960s gathered momentum during the 1970s. However, conventional monetary policy instruments, such as the Bank Rate and OMOs, were deemed insufficient to address the effects of money supply on price stability Das (2020).

India's monetary policy shifted towards monetary targeting between 1985 and 1998. The inflationary pressure caused by the government's reliance on deficit finance necessitated a tightening of monetary policy. The Chakravarty Committee suggested a monetary targeting system to limit monetary expansion and regulate inflation. In this method, reserve funds served as the operating target and broad funds as the intermediate aim. The CRR was the primary instrument of monetary control. Nonetheless, due to continued fiscal domination, SLR and CRR reached their maximum levels in 1990. Das (2020).

The balance of payments crisis led to structural reforms, the deregulation of the financial sector, and the introduction of a market-determined exchange rate regime. With the increase in flow of foreign capital and innovations in financial sector, the money demand function stability and broad money's effectiveness as an intermediate aim became dubious. In addition, there was a shift toward market-based finance in

both the public and private sectors. 1997 saw the replacement of ad hoc Treasury bills with a system of ways and means advances (WMAs). Over this time period, the average domestic growth rate was 5.6% and the average WPI-based inflation rate was 8.1% Das (2020).

Overall, the evolution of monetary policy in India has seen significant changes in approach and tools used by the RBI to achieve its objectives. The focus has shifted from maintaining convertibility of the rupee into gold to achieving high growth rates, controlling inflation, and promoting economic development. The evolution of monetary policy has been marked by the adoption of various frameworks, such as monetary targeting and multiple indicators approach, and the use of various instruments, such as credit controls and interest rate channels, to achieve the objectives of monetary policy Das (2020).

Between 1998 and 2015, the Reserve Bank of India recognized that the effectiveness of their monetary targeting framework was being compromised by the liberalization of the economy and financial innovations. Hence, in April 1998, they developed a multiple indicators strategy that encompassed not just monetary aggregates but also indicators such as credit, production, inflation, trade, capital flows, exchange rate, returns on different markets, and fiscal performance which were considered to be forward-looking. This allowed for a more inclusive and adaptable method of formulating the policy. Das (2020).

By instituting fiscal discipline, the Fiscal Responsibility and Budget Management Act (FRBM) of 2003 added flexibility to monetary policy. From the early 1990s, the

deregulation of interest rates and the increased market orientation of the domestic economy have facilitated a move from direct to indirect instruments of monetary policy, with a larger focus on rate channels in comparison to quantity instruments. Short-term interest rates were used as instruments to signal the RBI's monetary policy stance, with greater emphasis placed on the integration of money market with other market segments to stabilize these rates Das (2020).

To steer monetary conditions towards the desired trajectory, the Reserve Bank used a variety of policy instruments, including changes in reserve requirements, standing facilities, and Open Market Operations (OMOs) to impact the amount of marginal liquidity. Changes in policy rates such as the Bank Rate and reverse repo/repo rates were used to change the price of liquidity. As per the macroeconomic outcomes such as GDP growth rate and WPI the multiple indicator approach worked fairly well .Das (2020).

During the period of 2013-2016, the existing monetary policy framework in India was questioned due to the co-existence of high inflation and weakening growth in the post-global financial crisis era. The US Fed's taper talk in 2013 further added to the challenges faced by domestic monetary policy. In response to these concerns, an Expert Committee was established to modify and enhance the framework, which finally proposed that inflation serve as the nominal anchor for India's monetary policy Das (2020).

The Indian government and the Reserve Bank signed the Monetary Policy Framework Agreement (MPFA) in February 2015, and flexible inflation targeting (FIT) was

introduced through an amendment to the RBI Act in May 2016. The new framework prioritized price stability with a target of 4% for consumer price headline inflation and a tolerance band of +/- 2%, while also considering the objective of growth Das (2020).

1.3.2 Evolution of Fiscal Policy in India

The Planning Commission was established in 1950, coinciding with the introduction of a federal Constitution that gave the central government the responsibility to manage economic development. In the subsequent planning process, emphasis was placed on strengthening public sector firms and instituting administrative controls across numerous industries. The primary objective of fiscal policy was to transfer private savings to support the expanding consumption and investment demands of the public sector. Additional goals were the reduction of income and wealth disparities through taxes and transfers, the promotion of balanced regional development, and the encouragement of small-scale companies (De, 2012).

Direct and indirect taxes were utilized as a tax policy to generate revenue from the private sector and fund the public sector, while also pursuing redistributive goals. The ratio of combined federal and state tax receipts to GDP increased from 6.3% in 1950-51 to 16.1% in 1987-88 (Kaur, 2015).

The Indian government authorized a review of the tax system in 1953, which led to recommendations from economist Nicholas Kaldor to reform the system due to inefficiencies and inequities. Despite Kaldor's recommendations, high tax rates

continued to be in place, leading to tax evasion. In 1985-86, the tax system was simplified, and the highest income tax rate was reduced to 50 percent. The central excise duty, which was initially used to tax raw materials and intermediate goods and not final consumer goods, was extended to cover all manufactured goods by 1975-76. The Indirect Tax Enquiry Report of 1977 recommended the introduction of input tax credits, and the modified value-added tax was introduced in a phased manner from 1986. By 1990-91, indirect taxes had increased to 65 percent of government revenue, while direct taxes accounted for only 13 percent. (De, 2012)

India's expenditure norms were conservative until the 1980s, with the central government running revenue surpluses and showing slow growth in gross fiscal deficit.However, increased expenditures financed by domestic and foreign borrowing led to a rise in the central revenue deficit and gross fiscal deficit. This increase in liabilities came at the cost of social and capital expenditures, with a decrease in capital disbursements and an increase in the interest component. By 1990-91, the largest component of revenue expenditures was the interest share, with subsidies constituting 17 percent and defence only 15 percent. The burden of servicing public debt and subsidies was quite significant.

In the aftermath of the balance of payments crisis in 1991, India adopted a path of economic liberalisation, which led to the removal of trade quotas and licences and an increase in foreign investment and trade. This shift prompted a reorientation of fiscal policy to align with the new economic paradigm.

The Tax Reforms Committee played a pivotal role in this process by providing a blueprint for the overhaul of both direct and indirect taxes. The key recommendations included a reduction in trade taxes, an increase in domestic consumption taxes, and an expansion of direct taxes. The committee also called for simplification of tax laws and procedures, improvement in tax administration, and modernisation of information systems. These recommendations have had a significant impact on the structure of India's fiscal policy (Rao and Rao, 2006).

In case of indirect taxes , the excise MODVAT credit system was expanded to cover most commodities and provide a comprehensive credit system by 1996-97. The eleven rates were combined into three with a few luxury items subject to additional non-rebatable tax in 1999-2000. The three rates were merged into a single rate and renamed as central VAT (CENVAT) in 2000-01 (Rao and Rao, 2006).

In 1994–1995 the service tax was implemented and then broadened to include other services. Input tax credits for both goods and services were eventually allowed at the central indirect tax level. The service tax became a significant source of revenue, given the growing service sector in the Indian economy (Rao and Rao, 2006).

The state government tax reforms in India were sporadic and inadequate even after the 1991 economic reforms. However, the introduction of a VAT in 21 states in 2005 provided great relief to consumers and traders while enhancing the state government's revenue. The VAT replaced the cascading sales tax and provided credits for taxes paid on inputs, thereby reducing tax evasion. The credit system covered inputs, purchases,

and capital goods, with the tax credit operating fully only for intra-state sales. As a result of the tax reform plans, the sources of central government revenue shifted from indirect to direct taxes, with the indirect taxes' share decreasing from 54 percent in 1995-96 to 43 percent in 2005-06 and the direct taxes' share increasing from 20 percent to 35 percent over the same period (De, 2017).

The expenditure strategy after 1991 aimed to decrease subsidies and non-capital expenditures. Despite this, the interest component of the large debt burden remained high. In 1995-96, the central government's revenue expenditures were divided into 9 percent for subsidies, 13 percent for defense, and 36 percent for interest (De, 2017).

Tax administration reforms and expenditure control led to a reduction in deficits. In 1996-97, the central government's revenue deficit was 2.37% of GDP, and the GFD was 4.84%. External debt was also reduced, with the debt to GDP ratio reaching a low of 2.99% in 1999-00. However, in the early 2000s, there was a resurgence of government debt and fiscal indiscipline. The central government's revenue deficit increased to 4.4% of GDP in 2002-03, and the GFD was 5.91% of GDP. By 2003-04, the combined liabilities of the centre and states had increased to 81.09% of GDP, while external liabilities were kept under control at only 1.67% of GDP (De, 2017).

The Fiscal Responsibility and Budget Management Act (FRBMA) was enacted in 2003 to prevent future fiscal imbalances and encourage fiscal sustainability. The FRBMA prescribed fiscal guidelines for the Indian government. The FRBM Act was enacted on July 5, 2004, to promote fiscal discipline by reducing fiscal and revenue

deficits. The Preface to the Act describes the Act's purpose, which is to promote intergenerational justice in fiscal management and long-term macroeconomic stability by removing fiscal obstacles to the successful conduct of monetary policy and careful debt management. The Act also seeks to increase the openness of the Central Government's fiscal operations and to execute fiscal policy within a medium-term framework. The Act set out targets to be achieved by 2008-09, which were to eliminate revenue deficit and reduce the fiscal deficit to 3% of GDP. However, the global financial crisis of 2008 led to a relaxation of these targets, and the goals of the FRBM Act had to be deferred. The Act was amended several times, and the latest amendments introduced medium-term rolling targets for expenditure indicators and the elimination of the effective revenue deficit by March 31, 2015. The Finance Act of 2018 introduced further changes, including a new deadline for the gross fiscal deficit target and limits on general government and central government debt. The Act also introduced an escape clause that provides flexibility in the operation of rules described in the FRBM Act in case of natural calamities and recession, among other things (Bhashkar, 2020).

1.3.3 Monetary - Fiscal Interface in India

The Reserve Bank of India Act of 1934 stipulates the manner in which India's monetary and fiscal policies interact. The Reserve Bank is entrusted with managing the public debt of both the Central and State governments, in addition to functioning as their primary banker, according the Act (Bansal, 2017).

There has been a gradual and ongoing shift in the nature of the relationship between the two policies, as they have adapted to changing circumstances and priorities. The interaction between the policies has been traced out on basis of study by Raj et al. (2011) on monetary and fiscal policy interactions in India and Reserve Bank of India (2013) report on currency and finance.

During the post-Independence period, the Reserve Bank of India (RBI) assumed a central role in the monetary-fiscal interface. Considering the economy's low level of savings and investment, fiscal policy played a crucial role in the development process, as seen by the succession of Five-Year Plans beginning in 1950–51. The increasing utilization of fiscal policy as a means of achieving economic control over the resources was complemented by the accommodating actions of monetary policy. Beginning with the Second Plan, the government resorted to deficit financing to bridge the resource gap in order to finance plan expenditures. As a result, the size and financing mode of the fiscal deficit had an impact on the conduct of monetary policy.

The RBI Act of 1934 made advances to the government for cash management purposes a constant means of funding deficits. They were being used on a regular basis to fund government deficit. In cases where the government's Reserve Bank balances dipped below the minimum requirement, ad hoc Treasury Bills were automatically generated to restore them. Despite the intended purpose of financing the government's short-term needs, ad hoc Treasury Bills were renewed through automatic issuance to replace those that matured. This resulted in the permanent

monetization of the government deficit, which caused the Reserve Bank to lose authority over the creation of base money.

Additionally, to deal with the challenge of substantial government borrowing for plan financing that couldn't be met by the market, the Reserve Bank had to subscribe to primary issuances of government securities. This approach, however, hampered the efficacy of monetary policy because it resulted in the production of primary liquidity in the system, delaying the increase of the Bank Rate to regulate the cost of government borrowings. To address this problem, the Reserve Bank Act was amended in 1956 to provide the Reserve Bank the authority to change the cash reserve ratio (CRR) maintained by banks in order to restrict the credit expansion in the private sector caused by reserve money creation from deficit financing.

The original objective of the Statutory Liquidity Ratio (SLR) established by the Banking Regulation Act of 1949 was to ensure that banks had sufficient liquid resources to cover any unexpected drains on their resources relative to their obligations. However, over time, the SLR has been gradually elevated and has transformed into a method for securing a growing captive investor base for government securities.This action was taken to fund the continuously growing fiscal deficit of the government, particularly following the nationalization of banks in 1969.

In the 1970s, as fiscal policy sought to promote social justice and reduce poverty, monetary policy switched from "physical planning" in the financial sector to "credit planning," which entailed direct lending and credit rationing.This transition altered

the government's relationship with the Reserve Bank, with the Reserve Bank adopting a more limited role in the framework of the financial system and the application of interest rates as a monetary policy instrument. During this time, reserve money growth due to Reserve Bank credit to the government became the most significant factor influencing monetary policy. In the 1970s and 1980s, monetary policy concentrated on restraining overall liquidity by increasing the Cash Reserve Ratio (CRR) and the Statutory Liquidity Ratio (SLR) to high levels.

Following the Chakravarty Committee's recommendations in 1985, the monetary policy strategy in India shifted from credit planning to monetary targeting starting in 1986-87. Under this approach, the main goal was to achieve a targeted growth rate of broad money supply (M3) by setting clear targets for primary liquidity creation. The Reserve Bank of India (RBI) commenced the practice of setting monetary targets to attain this objective soon after the Union Budget was presented, which provided details on the budget deficit and the government's market borrowing plan. This shift in policy framework marked a departure from the previous emphasis on direct lending and credit rationing, and reflected a greater reliance on market-based instruments to achieve macroeconomic stability.

The 1991 balance of payments crisis highlighted the budget deficit as the key problem, necessitating a coordinated response by the government and the Reserve Bank. The recognition of the significance of monetary management resulted in the prioritization and implementation of fiscal consolidation in 1991-92. A critical measure taken during the 1990s with respect to the monetary-fiscal interface was the

gradual elimination of automatic monetization through the issuance of ad hoc Treasury Bills, which began in September 1994. The Reserve Bank and the Government of India completely phased out the creation of ad hocs by April 1997 through Supplemental Agreements. Beginning in September of 1994, Supplementary Agreements between the Reserve Bank and the Government of India eliminated ad hocs completely by April 1997. This greatly decreased reliance on monetization from 1990-1991 to 1996-1997, allowing the Reserve Bank to reduce the CRR and the SLR and freeing up banking system resources for the commercial sector, allowing the Reserve Bank to reduce the CRR and the SLR.

The elimination of automatic monetization via ad hoc Treasury Bills made it possible for the Reserve Bank to use the indirect instruments again. These included the use of the Bank Rate as a monetary policy instrument, the reactivation of OMO as a monetary management tool, the introduction of an auction system for the primary issuance of government securities, and the establishment of a liquidity adjustment facility to manage daily liquidity in the banking system.

The phasing out of automatic monetization through ad hoc Treasury Bills considerably lowered the fiscal control over monetary policy, but it did not abolish it entirely. Due to having a G-Sec market that was not well developed, the Reserve Bank had to resort to private placement/devolvement of government securities in the late 1990s. These securities were later offloaded through open market sales during unfavorable market conditions. However, the Reserve Bank was prohibited from engaging in primary market subscriptions of government securities as of April 1,

2006, due to the enactment of the FRBM Act in 2003. This enabled the Reserve Bank to have greater flexibility in conducting monetary policy.

The changes in regime have significantly increased the autonomy of monetary policy in India. However, the new regime has also presented fresh challenges for coordination between fiscal and monetary policies, which require attention to (I) the potential for inflation from large fiscal deficits, even in the absence of conventional monetization, and (II) debt dynamics that can lead to crowding out of private investment and affect monetary management.

The impact of fiscal policy on monetary policy extends beyond the issue of monetization. Inflationary pressures can arise from large fiscal deficits even in the absence of central bank financing. Despite deregulation of administered prices in the energy sector, inflation can remain suppressed, impeding inflation management. Initially, suppressed inflation contributes to inflation as the fiscal deficit widens due to subsidies required by price rigidity. Eventually, unsustainable subsidies necessitate significant price adjustments that feed into inflation expectations, exacerbating inflationary pressures.

There has been a shift in fiscal policy institutions from discretionary fiscal stance to fiscal rules, which aim to keep deficits within a numerical threshold level normalized to GDP. Similarly, in recent times, monetary policy authorities in India have adopted policy rules such as inflation targeting and central bank independence, as recommended by the Urjit Patel Committee in 2014 and the 'new monetary

framework' signed between the Government of India and Reserve Bank of India in February 2015 (Patel et al., 2014).

India has seen a reduction in fiscal dominance of monetary policy in the past 20 years due to several fiscal and monetary reforms. Government debt auctions, supplemental agreements between the Reserve Bank of India and the government, and the Fiscal Responsibility and Budget Management (FRBM) Act of 2003 all contributed to the transition to a market-determined interest rate system and the end of automatic monetization of fiscal deficits.These measures are believed to have significantly curbed the monetization of debt and reduced fiscal dominance of monetary policy in India.

1.4 Objective of the study

The broad objective of this study was to empirically analyse the nexus between the monetary and fiscal variables and their impact of key macroeconomic variables in India. The study had two objectives. Firstly, to examine the response and interaction of monetary and fiscal policy towards specific macro-variables. Secondly, to investigate the reaction of macro-variables to macro policy shocks while considering the various policy interactions occurring in the background. Further, based on the interaction between monetary and fiscal policy, this study has examined their efficiency. It is suggested that conducting a separate analysis solely based on inflation or output growth would not present a comprehensive picture, as these policies interact with each other.

The specific objectives of the study are listed below:

1. To understand the reaction of monetary and fiscal policy variables to each other.

2. Examine whether the policies are complementary or substitutes to each other under different macroeconomics shocks.

3. Impact of monetary policy shock on macroeconomic variables .

4. Impact of fiscal policy shock on macroeconomic variables.

5. Impact of macroeconomics situation such as in case of aggregate demand and aggregate supply shock on monetary policy variable .

6. Impact of macroeconomics situation such as in case of aggregate demand and aggregate supply shock on fiscal policy variable.

7. Examine whether the monetary policy variable respond differently to tax shock vis-a-vis spending shock.

8. Understanding the fiscal policy variable and exchange rate dynamics and its implication for monetary policy.

9. Understanding the efficiency of the two policies.

1.5 Research Questions

Q1. How does monetary (interest rate) and fiscal policy variable (taxes and government spending) react to each other?

Q2. Are the policies are complementary or substitutes to each other?

Q3. What is the impact of monetary policy shock (ie. interest rate shock) on macroeconomics variable ?

   a. What is the impact of interest rate shock on output?

b. What is the impact of interest rate shock on inflation?

Q4. What is the impact of fiscal policy shock on macroeconomics variable?

    a. What is the impact of tax shock on output?

    b. What is the impact of tax rate shock on inflation?

    c. What is the impact of government spending shock on output?

    d. What is the impact of government spending on inflation?

Q5. What is the impact of different macroeconomics situation on monetary policy variable?

    a. What is the impact of an aggregate demand shock on interest rate?

    b. What is of the impact of an aggregate supply shock on interest rate ?

Q6. What is the impact of different macroeconomics situation on fiscal policy variable?

    a. What is the impact of an aggregate demand shock on taxes ?

    b. What is the impact an aggregate demand shock on government spending ?

    c. What is the impact of an aggregate supply shock on taxes ?

    d. What is the impact of an aggregate supply shock on government spending ?

Q7. Does the monetary policy variable respond differently to tax shock vis-a-vis spending shock ?

    a. What is the impact of tax shock on interest rate ?

    b. What is the impact of government spending on interest rate?

Q8. Which policy is better at stimulating the output ?

    a. What is the impact of interest rate shock on output?

    b. What is the impact of tax shock on output?

    c. What is the impact of government spending shock on output?

Q9. Which one of the fiscal instrument- tax or spending is better at stimulating output?

    a. What is the impact of tax shock on output?

    b. What is the impact of government spending shock on output?

Q10. What is the effect of fiscal policy instrument on the exchange rate and monetary policy dynamics?

    a. What is the impact of tax shock on exchange rate ?

    b. What is the impact of government spending on exchange rate?

    c. What is the impact of interest rate shocks on exchange rate?

1.6 Research Hypothesis :

1.   Fiscal policy instruments (Taxes and spending) have significant impact on monetary policy instrument (interest rate).

   1. a. Government spending has significant impact on interest rate.

   1. b. Taxes have significant impact on interest rate.

2. Monetary policy instrument (interest rate) has significant impact on fiscal policy instrument (Taxes and Spending).

   2. a. Interest rate has significant impact on Taxes.

   2. b. Interest rate has significant impact on government spending

3. Fiscal policy shock has significant impact on macroeconomic variable.

   3.a. A tax shock has significant impact on output.

   3.b. A government spending shock has significant impact on output.

   3.c. A tax shock has significant impact on inflation.

   3.d. A government spending shock has significant impact on inflation.

4. Monetary policy shock has significant impact on macroeconomic variables.

    4.a. An interest rate shock has a significant impact on inflation.

    4.b. An interest rate shock has a significant impact on output.

5. Complementarity or substitutability of the policy variable depends upon the type of shock.

6. Macroeconomic variable (non policy shock) has significant impact on monetary variable .

    6.a. An Inflation shock has significant impact on interest rate.

    6.b. An output shock has significant impact on interest rate.

7. Macroeconomic variable (non policy shock) has significant impact on fiscal variable .

    7.a. An inflation shock has significant impact on taxes.

    7.b. An inflation shock has significant impact on government spending.

    7.c. An output shock has significant impact on taxes.

    7.d. An output shock has significant impact on government spending.

8. There is significant difference in impact of tax shock vis-a vis spending shock on monetary variable.

9. Efficiency of policy in terms of stimulating output depend upon the type of shock.

10. There is significant impact of fiscal variable on exchange rate .

    10.a. A tax shock has significant impact on exchange rate.

    10.b. A government spending shock has significant impact on exchange rate

1.7 Significance of the study:

Primarily, the study of monetary and fiscal policy interactions provides policymakers with valuable insights into the effectiveness and efficiency of policy interventions in achieving macroeconomic objectives, particularly in the context of emerging market economies. By examining how these policies interact and influence each other, policymakers can design more effective and coordinated policy responses to macroeconomic challenges, optimizing the use of limited resources while minimizing unintended consequences.

Moreover, the examination of the interaction between monetary and fiscal variables is vital in identifying potential sources of instability within the economy. Uncoordinated or conflicting policies can result in unintended consequences and undermine macroeconomic stability. By identifying sources of instability, policymakers can implement measures to prevent or mitigate these risks, promoting long-term economic stability.

Furthermore, the study of monetary and fiscal policy interactions can provide crucial insights into the transmission mechanisms of policy measures. By understanding how policy measures affect the economy, policymakers can design more effective policy interventions that achieve their desired objectives with minimal side effects, improving the overall effectiveness of policy implementation.

Accurate forecasting is also a critical outcome of studying the interaction between monetary and fiscal variables. With accurate forecasting, policymakers can anticipate

potential risks to the economy and implement appropriate policy measures to mitigate them, reducing uncertainty and promoting economic stability.

Finally, the study of monetary and fiscal policy interactions is crucial for the development of economic theory and models. By examining how these policies interact and influence each other, economists can develop more comprehensive and accurate models of the economy, leading to better policy recommendations and interventions, and ultimately promoting long-term economic growth.

In summary, the study of the interaction between monetary and fiscal variables is vital for policymakers, researchers, and economists alike, providing valuable insights into policy interventions, identifying potential sources of instability, improving forecasting accuracy, and contributing to the development of economic theory and models.

1.8 Organisation of the Study

The thesis comprises of five chapters, with the initial chapter serving as an introduction to the ongoing debate concerning the interactions and efficacy of monetary and fiscal policies. Chapter 1 contextualises the research by providing a general overview of the topic , the macroeconomic policy framework in India while also highlighting the study's motivations, and objectives, particularly as they relate to the Indian context.

Chapter 2 provides a thorough literature review, encompassing an examination of the basic theories underpinning fiscal and monetary policies. While reviewing the

available literature, this chapter prioritizes the discussion of not only previous empirical studies but also the analytical methods that were employed in policy analyses. By doing so, the research problems and objectives of the thesis are developed based on gaps that are identified in the literature.

Chapter 3 of the thesis presents the theoretical and empirical frameworks used in the study. Additionally, the chapter describes the data used in the empirical model, including its sources and characteristics.

Chapter 4 of the thesis examines the empirical analysis of the interaction between fiscal and monetary policies in India. Additionally, the chapter justifies the use of SVAR methods as the primary estimation technique. After estimating the model, the chapter discusses the findings by analyzing the impulse responses and variance decompositions.

In Chapter 5, a summary of the entire thesis is presented along with the main conclusions and policy recommendations. The chapter also identifies and discusses the limitations of the current study, and suggests potential areas for future research to improve upon the findings.