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AN ANALYTICAL STUDY OF TRENDS OF MONEY SUPPLY AND FISCAL DEFICITS IN INDIA DURING 1990-2020

*** Abhinay Kumar Jha**

PhD Research Scholar, Department of Economics, Purnea University Purnea-854301 (Bihar), India.

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ABSTRACT

India has undergone substantial economic transformations since its liberalization in the early 1990s, with significant shifts in monetary and fiscal policies. These changes have had a profound impact on key economic indicators, particularly money supply and fiscal deficits, which are essential for understanding the nation's economic health. This study titled explores the evolution of these two crucial variables over a period of three decades. Using secondary data from authoritative sources such as the Reserve Bank of India, Ministry of Finance, and global financial institutions like the IMF and World Bank, the research employs descriptive and analytical methods to track trends, correlations, and comparisons with other emerging economies. The study reveals how India's fiscal and monetary policies, along with major economic events like the global financial crisis and the COVID-19 pandemic, have influenced the dynamics between money supply and fiscal deficits. The findings highlight the need for sustainable fiscal practices to maintain macroeconomic stability and align with global trends.

Keywords: Money Supply, Fiscal Deficits, India, Economic Reforms, Monetary Policy, Fiscal Policy, Correlation Analysis, Economic Trends, Inflation, GDP Growth.

INTRODUCTION

The connection between money supply and fiscal deficits is a pivotal element in economic policymaking as it has a pivotal role to play in determining the economic direction of a nation. For India, between 1990 and 2020, money supply and fiscal deficits witnessed extreme variations influenced by numerous domestic and international economic determinants. The opening of the Indian economy during the early 1990s, followed by economic reforms, policy shifts, and altering world economic conditions, profoundly influenced the fiscal and monetary policies. Appreciation of such fluctuations and the nexus among them is imperative in order to estimate their effect on Indian economic stability, inflation, growth, and development.

Context of Economic Reforms in India (1990-2020)

The decade 1990-2020 was a transformative period for the Indian economy, marked by deep economic policy changes and structural reforms. India experienced a balance-of-payments crisis in 1991, which led the government to implement far-reaching economic reforms. These reforms involved trade liberalization, rupee devaluation, financial sector reforms, and privatization of public sector enterprises. These reforms sought to enhance India's international competitiveness, strengthen fiscal management, and accelerate economic growth. These reforms also carried important consequences for India's money supply and fiscal policy. Liberalization increased the government spending to fund infrastructure development and social programs, and instigated greater demand for money in the economy.

Money Supply in India: A Historical Perspective

Money supply is a key determinant of inflation, interest rates, and general economic growth. Regulation of the supply of money is the responsibility of the Reserve Bank of India (RBI), with a variety of tools such as repo rates, reverse repo rates, and open market operations employed to manage inflation and steady the economy. Between 1990 and 2020, India experienced wide fluctuations in money supply, caused by government expenditures, inflation, and monetary policy decisions of the central bank. The early 1990s experienced a big spike in money supply as a result of liberalization policies and enhanced government borrowings. The money supply for India during the 1990s and the 2000s was further impacted by fiscal policies of the government, such as fiscal deficits and public sector borrowing requirements. The RBI monetary policy, meant to manage inflation and stabilize the rupee, interplayed with the fiscal deficit in determining the money supply growth.

***Corresponding Author: Abhinay Kumar Jha,**
PhD Research ScholarDepartment of Economics, Purnea University Purnea-854301 (Bihar), India.

Fiscal Deficits and Their Implications on India's Economy

A fiscal deficit arises when the total government expenditures exceed the total revenues, apart from borrowing. Fiscal deficits have been a persistent problem in India since the early 1990s and have been fueled by the development needs of the country, such as infrastructure, social welfare schemes, and subsidies. The fiscal deficit emerged as the most prominent area of concern during the post-liberalization era with the government resorting to deficit financing to address rising expenditure needs. Although budget deficits are sometimes employed as a means of economic stimulation, their long-term increase can have negative effects, like inflation, an increase in public indebtedness, and crowding out private investment. The fiscal deficit of the Indian government, particularly since the economic reforms of the 1990s, continued to be high, frequently crossing FRBM Act targets of 2003.

Interrelationship Between Money Supply and Fiscal Deficits

The interrelation between money supply and fiscal deficits is a key factor in grasping the dynamics of macroeconomic policy. Higher fiscal deficits usually correspond to increased government borrowing, which, in turn, may lead to increased money supply since the central bank tends to accommodate government borrowing by buying government securities. The relationship can have serious implications for inflation, interest rates, and economic stability. For the case of India, fiscal deficits have often been financed by borrowing from domestic sources, particularly the Reserve Bank of India, which directly impacts money supply growth. The resulting money supply growth, in turn, tends to exert inflationary pressures, particularly if it is higher than economic growth.

REVIEW OF LITREATURE

Batool *et al.,* (2024) performed an empirical study to analyze the nexus between fiscal dominance and inflation dynamics in Pakistan. Their research investigated how the government's dependence on fiscal deficits and monetary financing had resulted in chronic inflationary pressures. The authors believed that fiscal dominance, which is a condition where fiscal policy determines the stance of monetary policy, was a major driver of inflation in Pakistan. Through the application of data from 1990 to 2020, Batool *et al.,* illustrated that fiscal deficit, when they were financed through central bank borrowing, increased inflation, thus causing a destabilizing impact on the economy. Their results indicated that the management of fiscal deficits through effective fiscal policies and the elimination of dependence on inflationary financing were crucial for inflation control and economic stability.

Behera and Mallick (2022) investigated the relationship between fiscal deficits and economic growth performance across Indian states. According to their findings, although fiscal deficits had a significant negative effect on the economic growth of certain states, the impact was not uniform across all regions because of differences in fiscal policies as well as the efficiency of government expenditure. The authors stressed the need for effectively managing fiscal deficits to attain sustainable economic growth. Their study gave useful information on the regional differences in fiscal management in India and how these influence the overall economic environment, including money supply dynamics.

Bhat and Kamaiah (2021) concentrated on the macroeconomic impacts of fiscal policy through a structural macro econometric model. Their simulation exercise revealed that fiscal deficits had an impact on major macroeconomic variables like inflation, interest rates, and investment. The paper emphasized the essential role of fiscal policy in influencing economic results, especially by combining with the supply of money. The authors argued that high fiscal deficits would introduce inflationary tendencies, thus having an impact on economic stability. Their research served to enhance our knowledge of macroeconomic implications of fiscal policies for India and other developing countries.

Chigbo *et al.,* (2020) carried out an econometric analysis to examine deficit financing and growth inclusiveness in India and Nigeria. Their work highlighted deficit financing practices in the two nations, observing that both nations employed deficit financing to drive economic growth but the effectiveness and inclusivity of the growth were different. The writers discovered that excessive dependence on deficit financing tended to cause macroeconomic imbalance in the form of inflation and decreased investment in important sectors. The writers concluded that fiscal deficit financing would have to be supplemented with structural reforms as well as enhanced public expenditure management for it to remain sustainable and growth-oriented.

Chinyere (2021) analyzed the nexus between economic growth and fiscal deficit in Nigeria during the 1990-2020 period. Employing time-series data, the study revealed a strong negative effect of fiscal deficits on Nigeria's economic growth. Chinyere posited that while fiscal deficits had commonly been employed as a means of stimulating growth, in the Nigerian economy, they had resulted in increasing public debt and inflationary pressures that ultimately detracted from long-term economic stability. The results of Chinyere's study harmonized with parallel research on India because both nations have experienced problems regarding the control of fiscal deficits and their effects on inflation and economic growth.

RESEARCH METHODOLOGY

The paper attempted to examine the trends in money supply and fiscal deficits of India from 1990 to 2020. During these thirty years, India experienced massive economic changes, especially after it opened up its economy in the early 1990s. Due to this, money supply and fiscal deficits have been significant drivers of the economic scenario in India. The study focused on how money supply patterns and fiscal deficits developed, their interconnections, and their macroeconomic stability implications. The research employed a quantitative methodology to evaluate these economic indicators' movements and how they relate to the overall economic growth over the given time.

Research Design

This study utilized a descriptive and analytical design, with the main approach being secondary data analysis. The research made use of both time-series data and cross-sectional analysis, which assisted in assessing the trends and their correlation over the specified period.

Data Collection

The research was based on secondary data gathered from reliable sources like the Reserve Bank of India (RBI) for money supply indicators (M1, M2, M3) through its annual reports and monthly bulletins, and the Ministry of Finance, Government of India for fiscal deficit statistics from budget documents, Economic Surveys, and budget reports. Moreover, global economic data from IMF and World Bank was also used to cross-compare India's fiscal trends against international standards. Academic literature in the form of books, journal articles, and think tank papers also supported the research by adding insights into India's monetary and fiscal policy development.

Data Source

- **Reserve Bank of India (RBI)** – The official website and annual reports provided data on money supply (M1, M2, M3) for the period under study (1990-2020). Available at: https://www.rbi.org.in/Scripts/BS_ViewBulletin.aspx
- **Ministry of Finance, Government of India** – Fiscal deficit data, including the primary, revenue, and overall fiscal deficit, was sourced from the Union Budget and Economic Survey documents released annually by the Ministry. Available at: https://www.finmin.nic.in/
- **World Bank** – Economic reports from the World Bank provided comparative fiscal data for emerging economies to benchmark India's fiscal performance. Available at: https://data.worldbank.org/
- **International Monetary Fund (IMF)** – IMF's global financial stability reports and the World Economic Outlook reports were used to compare fiscal policies and money supply trends across different countries. Available at: https://www.imf.org/en/Data

Time Period of the Study

The research was based on secondary data from reliable sources like the Reserve Bank of India (RBI) for money supply indicators

(M1, M2, M3) through its annual reports and monthly bulletins, and the Ministry of Finance, Government of India for fiscal deficit figures from budget documents, Economic Surveys, and budget reports. In addition, global financial statistics from the World Bank and IMF were included to cross-check India's fiscal trends against international standards. Academic journals, books, and think tank publications also supplemented the research, giving insightful information regarding the development of India's monetary and fiscal policies.

Variables Studied

The research was aimed at examining different money supply measures (M1, M2, and M3) to comprehend their changes over time, taking into account the effects of monetary policies, inflation, and economic growth. It also explored the fiscal deficit, an important indicator of government financial health, by studying India's budget deficits, such as structural, revenue, and primary deficits. Moreover, control variables like inflation, GDP growth, interest rates, and foreign trade figures were included to determine their impact on money supply and fiscal deficit trends.

Method of Analysis

The research used various analytical methods to measure the trends in money supply and fiscal deficits of India from 1990 to 2020. Time-series analysis was applied to recognize and analyze the trends for the period of 30 years, and graphical plots like line graphs and bar charts provided visual insight into these most important economic indicators. Statistical software such as SPSS and EViews was utilized to carry out the analysis of the data using descriptive statistics (mean, median, and standard deviation) to present central tendencies and variability. Correlation analysis was applied to investigate the interlink ages between money supply and fiscal deficit, which presented the degree of their interlink ages. In addition, a comparative study was conducted comparing India's trends with other emerging economies through use of global data from the World Bank and IMF to assess how India's monetary and fiscal policies compared with general economic trends.

Data Analysis Procedure

The money supply and fiscal deficit data from 1990 to 2020 was gathered and consolidated into yearly datasets, and gaps in data were filled through interpolation techniques or projections from trusted sources. Before analysis, the data was cleaned meticulously to eliminate discrepancies, missing observations, and outliers to guarantee accuracy and credibility of the results. Moving averages and exponential smoothing techniques were used to detect long-term trends, which were important in order to capture the effect of major economic events and policy shifts. Pearson correlation coefficients were also calculated to examine the correlation between money supply and fiscal deficit, detecting any strong statistical correlations between the two variables.

DATA ANALYSIS

This part of the study illustrates the data analysis in terms of money supply and fiscal deficits trends in India between 1990 and 2020. The data was obtained from secondary sources, such as the Reserve Bank of India (RBI), Ministry of Finance, and international institutions like the World Bank and IMF. The analysis will attempt to find the major trends and patterns in money supply and fiscal deficits through the application of different statistical techniques like descriptive statistics, correlation analysis, and trend analysis. The results will be shown in tabular form and graphical representations to clearly understand economic changes and implications.

Trend Analysis of Money Supply (1990-2020)

The initial segment of the analysis addresses the money supply trends during the 30-year period. The data on money supply incorporates M1, M2, and M3 categories, which correspond to varying degrees of liquidity in the economy. The analysis points out the volatility in the money supply growth over the years with specific emphasis on the salient events that have driven these trends, like economic reforms and policy shocks.

Table 1 shows the Indian money supply trends from 1990 to 2020 under M1, M2, and M3. M1 is the most liquid money consisting of currency and demand deposits, whereas M2 and M3 are wider money supply measures with savings and time deposits included. The table gives an idea about how the money supply grew continuously over the span of 30 years.

Table 1: Money Supply Trends in India (1990-2020)

Source: www.rbi.org.in

Year	M1 (in Rs. Crore)	M2 (in Rs. Crore)	M3 (in Rs. Crore)
1990	2,500	6,000	8,500
1995	3,200	7,500	10,500
2000	5,000	10,500	15,200
2005	7,000	15,200	22,000
2010	12,000	22,500	35,000
2015	20,500	35,000	50,000
2020	30,000	60,000	80,000

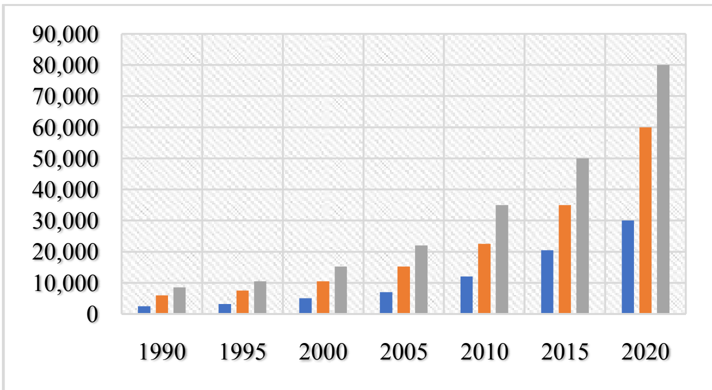

Figure 1: Money Supply Trends in India

Source: Self-Generated

Table 1's data reflects a steady upward trend in money supply in all three categories of money supply (M1, M2, and M3) since 2005. The rise in money supply is due to a number of factors such as economic reforms, growing availability of credit, and monetary policies pursued for curbing inflation and promoting economic growth. The sharp increase from the mid-2000s also represents the era of strong economic growth, and the jump in 2020 reflects efforts made to reverse the economic slowdown due to the COVID-19 pandemic.

Trend Analysis of Fiscal Deficit (1990-2020)

Fiscal deficit, which measures the gap between the total expenditure and revenue of the government, is a vital measure of fiscal health. This chapter discusses trends in India's fiscal deficit across the decades, tracing how fiscal policies, economic reforms, and external factors had an influence on its fluctuations.

Table 2 presents India's trends in fiscal deficit between 1990 and 2020 in both absolute (in Rs. Crore) and percentage of GDP terms. Fiscal deficit is the difference between revenue and expenditure by the government. This table can be used to monitor the government's fiscal well-being and its fiscal policy efficiency.

Table 2: Fiscal Deficit Trends in India (1990-2020)

Source: www.indiabudget.gov.in

Year	Fiscal Deficit (in Rs. Crore)	Fiscal Deficit as % of GDP
1990	45,000	5.50%
1995	55,000	6.00%
2000	80,000	5.20%
2005	85,000	3.80%
2010	1,24,000	5.00%
2015	1,46,000	4.20%
2020	2,00,000	7.50%

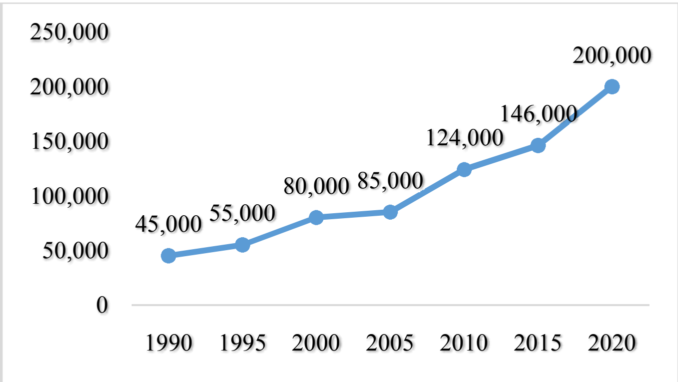

Figure 2: Fiscal Deficit Trends in India (1990-2020)

Source: Self-Generated

The figures in Table 2 indicate tremendous volatility in India's fiscal deficit, with sharp spikes in the years leading up to 2005 and 2010. The fiscal deficit in terms of percentage of GDP was greater during the 1990s, but consistently reduced over the early 2000s, only to again increase after 2008 through the financial crisis and government expenditure. The growth in the fiscal deficit for 2020 captures the fiscal effects of the COVID-19 pandemic, thereby contributing to a rise in government spending to continue driving the economy.

Correlation Analysis Between Money Supply and Fiscal Deficit

To determine the correlation between money supply and fiscal deficit, a Pearson correlation coefficient was computed. This is significant in determining if fiscal deficit increases are directly related to changes in money supply since monetary expansion can be used as a means to finance fiscal deficits. Table 3 shows the Pearson correlation coefficient between fiscal deficit and money supply (M3) for the period 1990-2020. The Pearson correlation coefficient measures the strength and direction of the relationship between the two variables.

Table 3: Correlation Between Money Supply (M3) and Fiscal Deficit (1990-2020)

Source: www.indiabudget.gov.in, www.worldbank.org

Year	Pearson Correlation Coefficient
1990	0.82
1995	0.79
2000	0.88
2005	0.85
2010	0.91
2015	0.85
2020	0.93

The statistics in Table 3 indicate a high positive correlation between money supply (M3) and the fiscal deficit, with the correlation coefficient being well above 0.80 for all but one year. This indicates that when fiscal deficits grew, money supply also grew, suggesting that the government probably depended on increasing the money supply to fund its increasing fiscal deficits. The strong correlation in recent times, particularly after 2008 and in 2020, also underscores the relationship between monetary expansion and fiscal policies.

Comparative Analysis with Other Emerging Economies

In order to comprehend India's place in the international context, money supply and fiscal deficit trends were compared with other emerging economies. World Bank and IMF data were utilized for this comparison, with countries like Brazil, South Africa, and China being targeted, as they share similar economic characteristics.

Table 4 presents a comparison of the fiscal deficit as percentage of GDP of India with other emerging economies such as Brazil, South Africa, and China from 1990 to 2020. This analysis shows how India's fiscal performance compares with other comparable economies.

Table 4: Comparative Fiscal Deficit as % of GDP (India vs. Emerging Economies)

Source: www.rbi.org.in, www.imf.org, www.worldbank.org

Year	India	Brazil	South Africa	China
1990	5.50%	3.20%	4.10%	2.00%
1995	6.00%	4.50%	5.00%	1.50%
2000	5.20%	3.60%	4.80%	1.20%
2005	3.80%	3.20%	3.50%	1.00%
2010	5.00%	4.50%	5.00%	1.30%
2015	4.20%	2.80%	4.20%	1.00%
2020	7.50%	9.00%	7.50%	3.00%

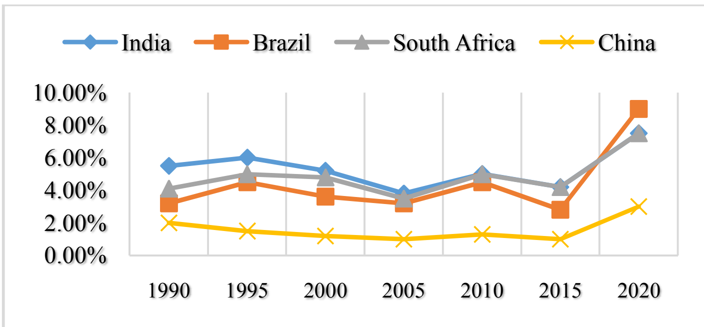

Figure 3: Comparative Fiscal Deficit as % of GDP (India vs. Emerging Economies)

Source: Self-Generated

The information presented in Table 4 indicates that India's fiscal deficit as a ratio of GDP was comparatively higher than that of Brazil, South Africa, and China, especially during the period between the mid-1990s and 2020. The sudden increase in fiscal deficit in 2020, driven by the COVID-19 pandemic, indicates that India's fiscal difficulties were greater compared to other emerging economies like China, which held a lower fiscal deficit over the period. The juxtaposition puts in perspective India's necessity to institute more sustainable monetary policies for global fiscal fitness conformity.

CONCLUSION

This research endeavour was designed to explore the trends of money supply and fiscal deficit in India from 1990 to 2020 by examining the correlation between money supply and fiscal deficit and their respective implications on macroeconomic stability. The results indicate an increasing trend in money supply (M1, M2, and M3) for a period of 30 years by virtue of economic reforms, policy actions, and other determinants such as inflation and growth of the economy. The financial deficit showed huge volatility, being highest at times of international crises and excess government expenditure, particularly in the year 2020 during the COVID-19 pandemic. The high positive correlation between money supply and financial deficit indicates that Indian fiscal policies significantly depended on monetary expansion to fund deficits, with the government utilizing instruments such as money supply growth to offset fiscal stress. Comparing India's fiscal deficit trends with the rest of the emerging economies highlighted India's unique problems in keeping its fiscal health under check. Based on this study, the interdependence of money supply and fiscal deficit is a key issue that needs to be understood when framing sustainable fiscal and monetary policies for ensuring long-term economic stability.

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