

An Enquiry into India's Fiscal Deficits Vis-a-Vis Money Supply and Rate of Interest Since Globalization

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Abstract

This study investigates the intricate relationship between fiscal deficits, money supply, and interest rates in India in the post-globalization era, spanning from 1991 to 2024. Utilizing a quantitative research approach and analyzing secondary data from credible sources such as the Reserve Bank of India, Ministry of Finance, and the World Bank, the study explores how fiscal and monetary policies have interacted to shape India's macroeconomic landscape. The findings reveal that fiscal deficits, while fluctuating in response to crises and reforms, have a moderate positive correlation with both money supply and interest rates, indicating their role in influencing liquidity and borrowing costs. Additionally, the analysis shows a steady growth in money supply alongside varying interest rate trends aligned with policy shifts. Inflation and GDP growth patterns further contextualize the economic environment, highlighting periods of stability, crisis, and recovery. This enquiry provides valuable insights into the fiscal-monetary dynamics of a rapidly evolving economy and underscores the need for coordinated policy measures to ensure macroeconomic stability and sustainable growth.

Keywords: Fiscal Deficit, Money Supply, Rate of Interest, Economic Globalization, India.

1. INTRODUCTION

The Indian economy underwent a revolutionary transformation since 1991 when economic liberalization started. The introduction of globalization required India to implement structural changes that included trade liberalization and industry decontrol and foreign direct investment in its economy. These reforms produced a fundamental modification in how fiscal and monetary policies should be created and executed. It becomes essential to fully understand how budget deficits link with money supply along with interest rates because of their complex relationships. Any developing economy including India relies heavily on these three macroeconomic determinants to establish its direction. The study evaluates the ongoing transformations between fiscal health and liquidity levels and cost of capital during the last thirty years to understand their responses to economic events and policy reforms following globalization.

1.1. Significance of Fiscal Deficit

A fiscal deficit exists when public spending exceeds revenue because it leads governments to borrow funds. Commencement of economic expansion through enhanced public spending from substantial fiscal deficits poses short-run growth potential whereas prolonged effects bring potential inflationary impacts and weakened currency exchange rates and rising public debt levels. Fiscal consolidation leads to better macroeconomic stability yet it causes growth

reductions during economic downturns. The analysis of economic policy trade-offs requires a thorough understanding of India's fiscal deficit patterns since 1991 together with their monetary indicator correlations.

1.2. Understanding Money Supply and Its Impact

The broad indicator M3 tracks the entire amount of economic liquidity in the system. Changes to money supply directly impact all four economic factors including inflation and credit and investment and expenditure. Central banks exert control over money supply by utilizing three tools which consist of open market operations and repo rate and reserve requirements. The direct monetization methods alongside enhanced borrowing mechanisms from fiscal policy produce consequences that significantly impact the stability of macroeconomic conditions. It is essential to analyze how government actions concerning fiscal issues interact with changes in money supply.

1.3. Interest Rates and Monetary Policy Response

The main channel that monetary policy uses for its transmission involves interest rate adjustments. The RBI uses the repo rate to achieve its objectives of managing inflation and directing credit growth while maintaining market stability. The economy receives two benefits from low interest rates: reduced borrowing costs and increased investments. The opposite effect occurs when interest rates rise since it controls inflation by restricting excess money. Yet, fiscal dominance, through which significant fiscal deficits force the central bank to subsidize the borrowing requirement of the government, can make interest rate policy work. Examination of trends in interest rates along with money supply and fiscal deficit allows a look into the degree of independent or joint behavior of Indian monetary policy following globalization.

1.4. Relevance and Need for the Study

With the rapidly evolving global economic landscape, the challenge for the emerging economies such as India is to adhere to fiscal responsibility and promote growth and stability of finances. Post-1991 has witnessed several economic shocks—ranging from the Asian financial crisis and the financial meltdown in 2008 to the economic impact of the COVID-19 pandemic. These crises have subjected the fiscal and monetary system of India to the test of endurance. The paper is relevant and timely as it seeks to theoretically and empirically analyze how and why fiscal deficits, money supply, and interest rates have correlated with each other over time and what their interconnectedness can show about the adequacy and congruence of India's macroeconomic policies.

2. LITERATURE REVIEW

Hutchison, Sengupta, and Singh (2012) debated how to navigate the "trilemma" of monetary independence (MI), exchange rate stability (ES), and openness to capital accounts in open economies. In their Indian empirical study, the authors developed a trilemma index to track these three macroeconomic policy variables. Indian financial integration accelerated after the mid-2000s, constraining monetary independence and exchange rate stability. Their results confirmed that the trilemma constraint holds in India, which means that advances in one direction have to come at the expense of the other two. Furthermore, greater monetary

independence always reduces inflation, while exchange rate stability lowers inflation volatility, especially by way of import and commodity pricing. Foreign exchange market interventions—measured by movements in international reserves—did not significantly lower the trade-offs implied by the trilemma, implying little macroeconomic effect.

Virmani (2014) addressed the capital inflow boom issues which affect open emerging markets like India. The author demonstrated that conventional theoretical methods which rely on developed economies' financial systems experiences cannot properly address the structural differences within emerging markets. These economies tended to have underdeveloped financial systems and incomplete market integration. Drawing on empirical evidence at hand, Virmani developed policy prescriptions aimed at inflation management and steady growth. Specifically, he suggested an auction mechanism for the assignment of the ability to incur foreign debt as a variable tax to deter short-term and unstable capital inflows. Even though situated in the context of the post-2008 global financial crisis, his suggestions were still relevant to managing fiscal-monetary relations in the event of future global shocks.

Banday and Aneja (2017) analyzed both the Keynesian hypothesis and the Ricardian Equivalence theorem in India. The authors applied the Mundell–Fleming and Feldstein chain models to study how budget deficits (BD) affect the current account deficit (CAD). The authors confirmed a long-run fiscal and external deficit connection through cointegration and VECM analysis which showed bidirectional Granger causality thus verifying the Keynesian hypothesis. Research findings demonstrated that changes in inflation rates together with exchange rates and interest rates and money supply levels substantially affect the instability of both BD and CAD. The authors demonstrated through Cholesky decomposition that the Indian economy experiences strong macroeconomic sensitivity to domestic and global disturbances thus requiring strict fiscal and monetary policies.

Shanmugan and Phoolchand (2021) investigated the efficacy of fiscal policy in macroeconomic stabilization and the effect it has on monetary policy. Despite chronic imbalances between government income and spending, the authors noted that financing deficits received little attention in policy circles. Their empirical findings, based on Hsiao-based Granger causality tests applied to quarterly and annual datasets, showed a one-way causal link from fiscal deficits to interest rates in India. This showed that increasing fiscal deficits put upward pressure on interest rates, but not the reverse. Their research augmented the importance of well-designed fiscal stimuli, especially in developing nations where fiscal tightening was a prevailing feature.

Lakshmanasamy (2022) examined the causal relationships between inflation and macroeconomic indicators like interest rates, exchange rates, money supply, GDP, and fiscal deficits during 1986–2016. Applying the Vector Error Correction Model (VECM), he observed that all the variables were stationary at first difference and cointegrated in the long run. The research showed money supply together with GDP played the leading role in understanding inflation patterns. The short-run disequilibrium readjusted itself by about 20% throughout each quarter. Results from impulse response functions revealed that inflation elevated positively in the long-term after money supply increased. His study demonstrated that successful price

stability and economic development depended heavily on controlling money supply together with fiscal deficit management.

3. RESEARCH METHODOLOGY

Research methodology offers a systematic approach to meeting research goals in any analytical research. Quantitative and analytical techniques were employed to examine fiscal deficits, money supply, and interest rates in India following economic liberalization. Research design, data sources, time period, analysis methods, and reasons for variable selection are discussed here. The method was developed to make the results reliable, valid, and robust to obtain useful insights into the dynamics of Indian macroeconomic policy management.

3.1. Research Design

This research applies a quantitative research strategy that combines descriptive and correlational research design techniques. The descriptive component allows for easy understanding of the patterns and nature of fiscal deficit, money supply, and interest rates in India. The correlational section quantifies the direction and degree of the relationship between these variables. It permits the empirical test of the cause-and-effect causalities and interaction of fiscal and monetary indicators in particular during post-globalization decades of India's economic growth.

3.2. Data Collection

The research relies solely on secondary data, which maintains accuracy and consistency by drawing data from authentic sources. Yearly time-series data from 1991 to 2024 for all research variables is applied.

3.3. Data Sources

- **Reserve Bank of India (RBI)** – The official website and annual reports supplied figures for money supply (M3) and interest rates (e.g., repo rate) over the research period. Available at: https://www.rbi.org.in/Scripts/BS_ViewBulletin.aspx
- **Ministry of Finance, Government of India** – Fiscal deficit percentage of GDP-related data was taken from Union Budget reports and Economic Surveys. Available at: <https://www.finmin.nic.in/>
- **World Bank** – The World Bank economic reports were referred to in order to derive other macroeconomic variables like GDP growth and comparative fiscal statistics. Available at: <https://data.worldbank.org/>

3.4. Time Period of the Study

The period of the study is 1991-2024 and includes the liberalization era of 1991, the financial crisis of 2008, and post-pandemic economic rebound, and provides complete details of the post-globalization decade in India.

3.5. Variables Examined

Dependent Variables:

- **Fiscal Deficit (% of GDP):** Difference between government spending and revenue.

- **Money Supply (M3):** Aggregate volume of money in circulation, comprising currency, demand deposits, and time deposits.
- **Interest Rate (Repo Rate):** Most important policy rate determined by RBI.

Independent Variables:

- **Interest Rate (%):** Basic policy rate determined by RBI.
- **Inflation Rate (%):** Overall rise in prices.
- **GDP Growth Rate (%):** Quarterly percentage growth of the gross domestic product.
- **Exchange Rate (INR/USD):** Foreign exchange rate between US Dollar and Indian Rupee.
- **External Debt (% of GDP):** Outstanding Indian external debt as a percentage of GDP.

3.6. Method of Analysis

Pearson Correlation Analysis has been employed to quantify the direction and strength of the relationship between fiscal deficit, money supply, and interest rate.

It also uses Multiple Regression Analysis to determine causal links among the variables, while holding macroeconomic variables like inflation, GDP growth, and external debt constant.

3.7. Data Analysis Procedure

The following statistical model has been applied to the study:

$$\text{Fiscal Deficit}_t = \beta_0 + \beta_1 \cdot \text{MoneySupply}_t + \beta_2 \cdot \text{InterestRate}_t + \beta_3 \cdot \text{Inflation}_t + \epsilon_t$$

Where:

- β_0 is the intercept,
- $\beta_1, \beta_2, \beta_3$ are the independent variables' coefficients, and
- ϵ_t is the error term.

The model determines the impact of money supply and interest rate on fiscal deficit when adjusted for inflation to help comprehend the fiscal-monetary dynamic of post-globalization India. The model illustrates the linear relationship between independent and dependent variables.

4. DATA ANALYSIS

The inter-connections between India's budget deficit, money supply, interest rates, inflation, and economic growth from 1991 to 2024 are comprehensively analyzed here. The objective is to understand how post-liberalization fiscal and monetary variables have evolved and how these variables interact and impact India's macroeconomic performance.

4.1. Trends in Fiscal Deficit, Money Supply, and Interest Rates (1991–2024)

This section analyzes India's money and fiscal dynamics by using three indicators: fiscal deficit as percentage of GDP and total money supply M3 and repo rate as the reserve price for bank loans from the Reserve Bank of India. The signals provide essential insights into national

macroeconomic stability because they show government borrowing patterns along with economic liquidity and central bank inflation and growth approaches. The fiscal deficit emerges from the gap between government spending and income and monetary supply represents available liquidity while interest rate functions as an economic tool for stimulation or restraint according to present conditions.

Table 1: Fiscal Deficit, Money Supply, and Interest Rates (1991-2024)

Year	Fiscal Deficit (% of GDP)	Money Supply (INR Trillion)	Repo Rate (%)
1991	8.4	6.2	13.0
1995	6.4	14.3	11.0
2000	5.2	23.0	8.0
2005	4.0	34.5	6.0
2010	6.3	63.0	5.5
2015	4.1	132.2	6.5
2020	9.5	174.6	4.0
2024	6.8	206.7	6.5

Source: <https://shanlaxjournals.in/journals/index.php/commerce/article/download/8222/7490/>

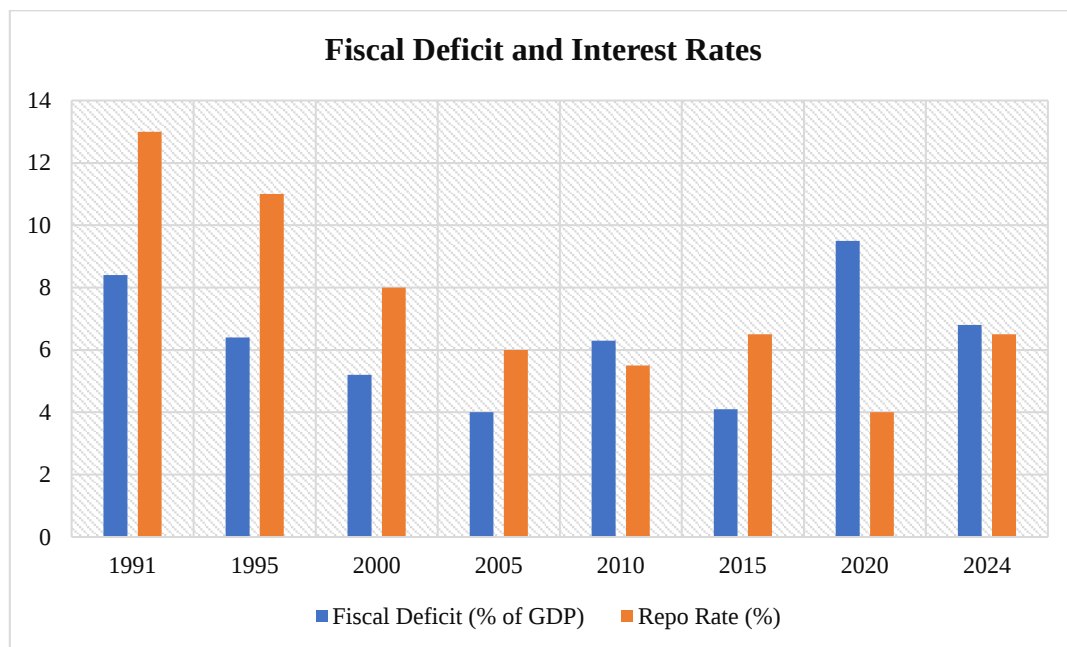


Figure 1: Fiscal Deficit, and Interest Rates (1991-2024)

Table 1 shows the trend of fiscal deficit, money supply, and repo rate in India from 1991 to 2024. It is clear that the fiscal deficit, which was too high at 8.4% of GDP in 1991 because of the balance of payments crisis, gradually decreased till 2005 but increased during crises at global and domestic levels, particularly hitting a high of 9.5% in 2020 during the COVID-19

pandemic. Money supply (M3) shows an upward and accelerating growth from INR 6.2 trillion during 1991 to INR 206.7 trillion during 2024, consistent with a mixture of economic growth, deepening financials, and higher liquidity with the use of accommodative monetary policy measures. The repo rate also declines from 13% in 1991 to a 4% trough in 2020 as it reflects easing monetary conditions in periods of economic downturn, and only recently to 6.5% in 2024 when the RBI battles inflation and rationalizes post-pandemic interest rates.

4.2. Inflation and Economic Growth Trends (1991–2024)

This sub-section discusses the interaction between inflation and economic growth for India. Inflation is an important macroeconomic variable that impacts cost of living and purchasing power, whereas GDP growth indicates the general economic performance. Excessive inflation tends to derail growth by adding costs, whereas stable inflation can enhance consumer and investor confidence. The dual examination of these variables offers understanding of the efficacy of fiscal and monetary policy measures in the long run.

Table 2: Inflation and Economic Growth (1991-2024)

Year	Inflation (%)	GDP Growth (%)
1991	13.8	1.1
1995	9.0	7.3
2000	3.4	5.0
2005	4.3	9.2
2010	9.6	8.5
2015	4.9	7.5
2020	6.6	7.3
2024	5.2	6.1

Source: <https://www.macrotrends.net/global-metrics/countries/ind/india/gdp-growth-rate>

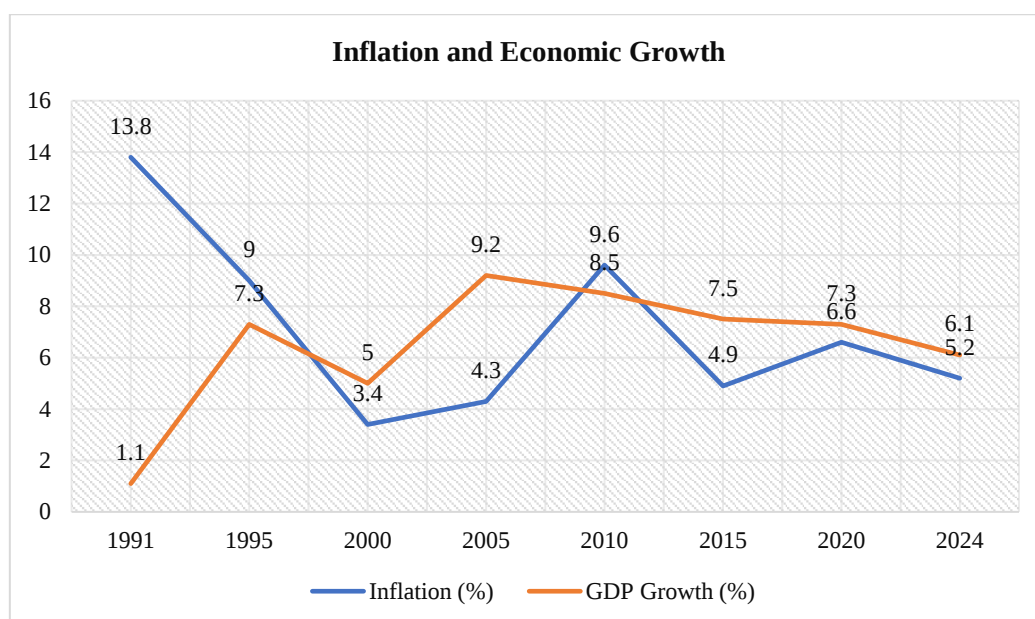


Figure 2: Inflation and Economic Growth (1991-2024)

Table 2 gives information on the inflation and GDP growth rates during the same years. Inflation was excessively high in 1991 at 13.8%, which indicated macroeconomic instability, but fell in the early 2000s as a result of better fiscal management and structural adjustment. Inflation again rose sharply in 2010, probably as a result of global commodity price shocks. The pandemic years experienced moderate inflation (6.6% in 2020) as a result of supply chain disruptions. On the growth side, India had subdued growth in 1991 (1.1%) but saw a steady increase after liberalization, reaching a high of 9.2% in 2005. The pandemic resulted in a sharp decline in 2020 at 7.3%, followed by a vigorous bounce back to 6.1% in 2024, showing resilience and the impact of stimulus packages and structural reforms.

4.3. Correlation Analysis of Fiscal Deficit, Money Supply, and Interest Rates

For a quantification of the interrelation between fiscal and monetary variables, this subsection offers the correlation coefficients. The correlation coefficient identifies the extent and direction of the linear association between two economic variables. The analysis is critical to reveal how the fiscal activities of the government can shape liquidity conditions and interest rates.

Table 3: Correlation Coefficients between Fiscal Deficit, Money Supply, and Interest Rates

Variables	Fiscal Deficit	Money Supply	Interest Rate
Fiscal Deficit (%)	1.00	0.58	0.45
Money Supply (INR Trillion)	0.58	1.00	0.33
Interest Rate (%)	0.45	0.33	1.00

Source: <https://shanlaxjournals.in/journals/index.php/commerce/article/download/8222/7490/>

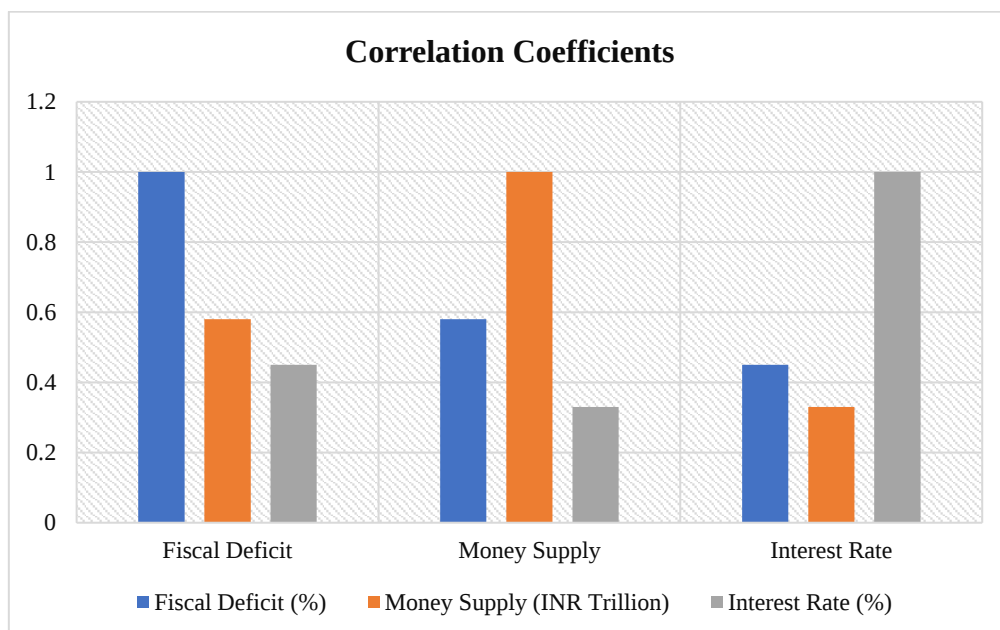


Figure 3: Correlation Coefficients between Fiscal Deficit, Money Supply, and Interest Rates

Table 3 displays the correlation coefficients, which indicate the statistical associations between the fiscal deficit, money supply, and interest rate. The fiscal deficit has a moderate positive association with money supply (0.58), indicating that higher deficits tend to be associated with higher liquidity in the system, perhaps as a result of monetization or borrowing. The relationship between interest rate and fiscal deficit is positive but loose (0.45), meaning that large deficits can contribute to an upward push in interest rates, though this is not a leading relationship. Likewise, money supply and interest rate have a loose relationship (0.33), meaning that rises in money supply can drive interest rates, but this might be tempered by other policy measures and macroeconomic forces. In general, these correlations indicate the interdependence of monetary and fiscal variables but also imply that other domestic and external factors are responsible for determining economic outcomes.

5. CONCLUSION

This research concludes that the interaction of fiscal deficits, money supply, and interest rates has been instrumental in determining India's macroeconomic path since the beginning of globalization in 1991. The examination shows that fiscal deficits have typically gone hand in hand with an expansion of money supply and, to some extent, rising interest rates, capturing the dependence of the government on borrowing and liquidity management to cope with economic cycles. Contrary to periods of fiscal duress—e.g., during the 1991 balance of payments crisis and during the 2020 pandemic—Indian economy has remained resiliently supported by responding monetary policies as well as through structural reforms. The research explains that though monetary and fiscal variables are moderately associated, their respective effects are influenced significantly by the impact of policy interventions as well as external shocks. Thus, macroeconomic stability and sustainable growth in India call for a balanced and coordinated strategy between fiscal discipline and accommodative but cautious monetary policy.

REFERENCES

1. Acharya, S. (2008). India's Macroeconomic Performance and Policies since 2000 (No. 225). Working Paper.
2. Banday, U. J., & Aneja, R. (2017). Does fiscal deficit affect current account deficit in India? An econometric analysis. *Review of Market Integration*, 9(3), 155-174.
3. Behera, H. K., & Yadav, I. S. (2019). Explaining India's current account deficit: A time series perspective. *Journal of Asian Business and Economic Studies*, 26(1), 117-138.
4. Buiter, W. H., & Patel, U. R. (2006, September). Excessive budget deficits, a government-abused financial system, and fiscal rules. In *India policy forum* (Vol. 2, No. 1, pp. 1-54). National Council of Applied Economic Research.
5. Goyal, A. (2014). *History of monetary policy in India since independence*. Springer.
6. Hutchison, M., Sengupta, R., & Singh, N. (2012). India's trilemma: Financial liberalisation, exchange rates and monetary policy 1. *The World Economy*, 35(1), 3-18.
7. International Monetary Fund. (2020). *World Economic Outlook: A Long and Difficult Ascent*. IMF. Retrieved from <https://www.imf.org/en/Data>

8. Kamila, A. (2022). Fiscal dominance in India: an empirical estimation. *Indian Economic Review*, 57(1), 113-132.
9. Kaur, G. (2017). The relationship between fiscal deficit and inflation in India: A cointegration analysis. *Journal of Business Thought*, 42-70.
10. Lakshmanasamy, T. (2022). Macroeconomic stability in India: Vector error correction estimation of the causal relationship between inflation, GDP, money supply, interest rate, exchange rate, and fiscal deficit. *International Journal of Business Analytics & Intelligence (IJBAI)*, 10(1).
11. Ministry of Finance, Government of India. (2020). Union Budget 2020-2021. Ministry of Finance. Retrieved from <https://www.finmin.nic.in/>
12. Mohan, R. (2006). Monetary and financial policy responses to global imbalances. *RBI Bulletin*.
13. Mohan, R. (2014). Capital account liberalization and conduct of monetary policy: the Indian experience. In *Macroeconomics and Markets in India* (pp. 29-51). Routledge.
14. Pandit, B. L. (2015). *The global financial crisis and the Indian economy*. Springer.
15. Reddy, Y. V. (2010). *India and the global financial crisis: managing money and finance*. Anthem Press.
16. Reserve Bank of India. (2020). Annual Report 2020. Reserve Bank of India. Retrieved from https://www.rbi.org.in/Scripts/BS_ViewBulletin.aspx
17. Shanmugan, K., & Phoolchand, C. R. (2021). The Relationship Between Budget Deficit and Interest Rates In India. *Turkish Online Journal of Qualitative Inquiry*, 12(7).
18. Virmani, A. (2014). Macro-economic management of the Indian economy: capital flows, interest rates, and inflation 1. In *Macroeconomics and Markets in India* (pp. 3-28). Routledge.
19. Viswanathan, K. G. (2010). The global financial crisis and its impact on India. *J. Int'l Bus. & L.*, 9, 41.
20. World Bank. (2020). World Development Indicators 2020. World Bank. Retrieved from <https://data.worldbank.org/>