

**DYNAMICS OF INDIA'S FISCAL DEFICIT:
AN ANALYTICAL STUDY OF ISSUES AND MANAGEMENT**

SYNOPSIS

Submitted By

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1.0 INTRODUCTION

Government are frequently immersed in the credence that one way of elucidating social issues is by expanding government spending. The government, as an operator of the general population is required to give education, employment, satisfactory wellbeing administrations, foundation and security among others. In the process of carrying out its obligations, the revenue prerequisites outstrip its accessibility, hence recourse to deficit financing in order to fill the crevice between consumption needs and revenue accessibility.

Fiscal deficit is an economic phenomenon where the government's aggregate consumption outperforms the revenue generated. It is therefore the gap between government's aggregate receipts and aggregate consumption that gives the flag to the government about the aggregate acquiring necessities from all sources. Fiscal deficit have been at the cutting edge of macroeconomic conformity to the degree that deliberate and reasonable arrangement of measures have been utilized to respond to imbalances in the economy in both developing and developed nations.

There are four ramifications of fiscal deficit; initially, a good part of it financed through obtaining from inside and outside the nation. This prompts to the expansion in public debt and its burden. Secondly, a part of fiscal deficit is financed through deficit financing that is monetization of fiscal deficit which prompts to the creation of new money and ascend in price or inflation. Thirdly, large deficit antagonistically influences economic growth. Because of large revenue deficit a large part of acquired funds by the government is utilized to finance current consumption expenditure of the government. Accordingly littler amount of are left for productive investment in infrastructure and social capital by the government. This brings down the rate of economic development. Finally, more borrowing by the government leaves fewer assets for private area venture.

It is generally perceived that fiscal deficit which is a key fiscal indicator and macroeconomic pointers such as growth, inflation, current account; exchange rate, interest rate etc. influence each other in both directions. Fiscal deficit has been rebuked for the assortment of ills that assail developing countries for various years. Hence, macroeconomic issues in particular high inflation rate, unemployment rate, high import reliance, saving-investment inequalities, heavy debt burden in addition to other things are connected with fiscal deficit and deficit financing.

1.1 INDIA'S FISCAL DEFICIT: THE GENESES

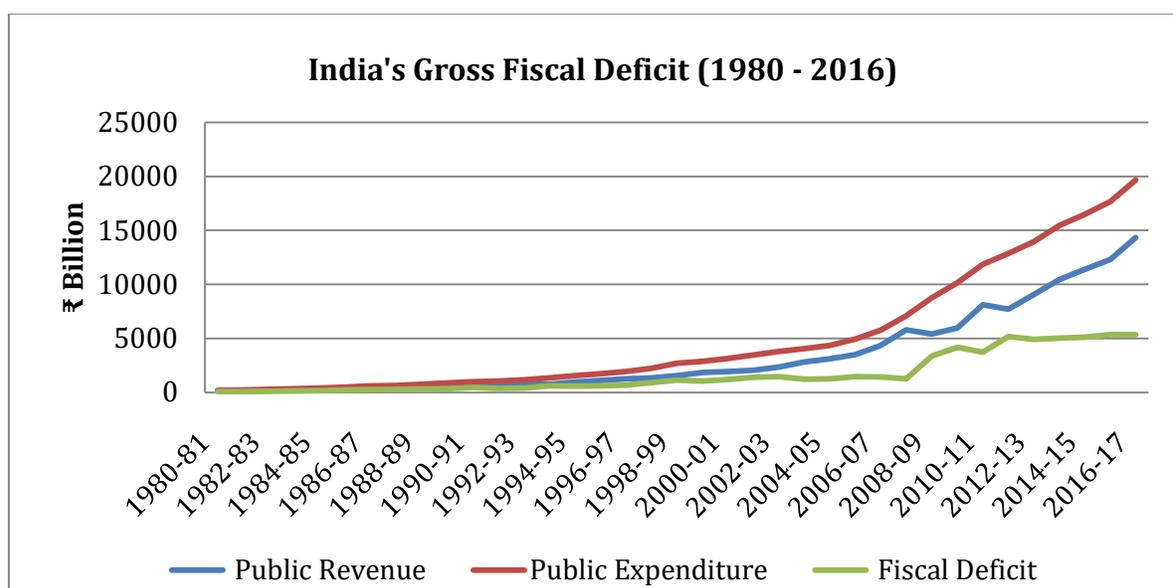
In India, fiscal policy has played a pivotal role since independence, contributing significantly to the socio-economic development process of the country. In a nascent economy where the income levels and financial savings were low, the fiscal policy assumed the responsibility of creating the capital base in the form of infrastructure to stimulate growth. During the initial years after independence, faced with problems associated with the partition of the country and the need to contain inflationary pressures brought about by World War II, the Government had to follow a judicious mix of raising taxes, resorting to borrowing or reducing expenditure. Thus, India embarked on a planning process since 1950 which assigned a large role to the public sector and taxation was made the mainstay of public finances (Pattnaik et al., 1990).

Initially, the Government set up the Central Economy Committee in 1947 to suggest, inter alia the measures to eliminate wasteful expenditure in administration and for reorganization of the administrative ministries on an economical basis. With the Government embarking on the five year plans since 1950, the expenditure policy of India reflected the objectives of the plan as expenditure budget was the vehicle and the framework in which the plan schemes were adjusted and acknowledged (Premchand, 1966). Be that as it may, after some time there was a jumble between planned use and non-planned use, correspondingly in the income receipts and capital receipts, thus, the term fiscal deficit came before us.

In a phased way, if one looks into expenditure pattern of government, the revenue expenditure as percent of total expenditure rose sharply from 65.5 percent in 1950-51

to 81.8 percent in 1997-2002, and further from 82 percent in 2007-08 to 83.9 percent in 2015-16. In comparison of this, the share of capital expenditure as percent of total expenditure decreased from 34.5 percent in 1950-51 to 18.2 percent in 1997-2002, and further, from 18 per cent in 2007-08 to 16.75 percent in 2015-16 (Tomar 2013).

The status of public expenditure and public revenue in India indicates that the rise in revenue since 1951 could not keep pace with that of expenditure; and fiscal gap jumped and resulted in a heavy requirement of borrowed fund. To cite, the public revenue-expenditure misalignment during 1950s to 1970s resulted in sharp growth in borrowing requirement from 17 percent in 1970s to 21 percent in 1980s. Considering the worsening fiscal position of the country, the Government of India announced long term fiscal policy in 1985. In this policy, the Central Government first time recognized the deteriorating fiscal position as the most important challenge of 1980s and set out specific targets and policies for achieving fiscal turnaround.



Source: Budget Documents, Govt. of India and State Governments, <https://www.rbi.org.in>.

If we look at position of public expenditure, public revenue and fiscal deficit since 1980-81, the gross fiscal deficit of the Government (Centre and States) as percent of Gross Domestic Product (GDP) rose from 9.0 percent in 1980-81 to 10.4 percent in 1985-86, and further to 12.7 percent in 1990-91. For the centre alone, the gross fiscal deficit rose from 6.1 percent of GDP in 1980-81 to 8.3 percent in 1985-86 and to 8.4 percent in

1990-91. Since these deficits had to be met by borrowings, the internal debt of the government accumulated rapidly from 35 percent of GDP at the end of 1980-81 to 53 percent at the end of 1990-91. Fiscal profligacy seen to have caused balance of payments crisis in 1991 and a reduction in the fiscal deficit was therefore an urgent priority at the start of the reforms. The combined fiscal deficit of the central and state governments was successfully reduced from 9.1 percent of GDP in 1990-91 to 6.8 percent of GDP in both 1991-92 and 1992-93 and the downward trend of gross fiscal deficit continued up to 1996-97. Since 1997-98, fiscal deficit had again started increasing from 6.1 to 9.6 percent of GDP in 2001-02 because of large rise in public debt involving large interest payments year over year which led to the diversion of resources from investment to debt servicing. With enactment of Fiscal Responsibility and Budget Management (FRBM) Act in 2003, the gross fiscal deficit get reduced from 8.3 percent of GDP to 4.0 percent of GDP from 2003-04 to 2007-08 respectively. Again global crisis of 2008-09 prompt delay of the FRBMA targets which resulted into rose in the gross fiscal deficit to 8.3 percent of GDP in 2008-09. From 2009-10 to 2015-16, despite several efforts made by the Government, fiscal deficit ranged between 9.3 to 6.5 percent of GDP.

A disquieting feature of Indian fiscal system was the huge size of monetized deficit which exerted inflationary pressures. The persistent and burgeoning revenue deficit which became endemic in the system pre-empted the borrowed resources, reducing the availability of resources for capital investment. Further, the fiscal deterioration of the 1980s also spilled over the external sector and resulted into macroeconomic crisis of 1991. The International Monetary Fund's (IMF) support to fight the crisis came in but with much macroeconomic conditionalities checking the fiscal menace being a major one among them.

With the process of economic reforms which started in 1991-92, the government announced its commitment to reduce fiscal deficit to 3-4 percent of GDP by mid 1990s from the level of about 8 percent during 1987-90. This step was among the many measures which the government started with the objective of stabilizing the economy. The structural adjustment program and the consequent economic reforms gave a fresh

dimension to empirical analysis of fiscal policy which focused not only on the various instruments of fiscal policy and issues of debt but also on the overall fiscal sustainability in the context of an open economy framework.

Although the first half of the 1990s witnessed some fiscal correction, its retraction during the second half of the decade underlined the need for a consistent and sustainable fiscal consolidation process. To introduce transparent fiscal management systems in the country and a more equitable and manageable distribution of the country's debts over the years and also to aim for fiscal stability for India in the long run, the Government of India passed Fiscal Responsibility and Budget Management Bill in 2000 signaling a new dawn in fiscal consolidation in India. The Fiscal Responsibility and Budget Management Act (FRBMA) enacted in 2003 provided that both the Centre and States will have to wipe out revenue deficit and cut fiscal deficit to 3 percent of GDP by 2008-09, thus bringing much needed fiscal discipline. Because of this, the fiscal deficit of Center declined from 3.9 percent in 2004-05 to 3.1 percent in 2007-08. However, at the time of recession, like many other countries of the G20, the Centre decided to go for counter cyclical measures to allay the effect of 2008 recession on the economy which resulted in increased in fiscal deficit to 6.5 percent of GDP in 2008-09.

Looking at this, the Government of India amended the FRBMA in 2012 and allowed the centre to change FRBM targets. The existing FRBM Act prescribes a target fiscal deficit of 3 percent of GDP for the centre but with no explicit justification for the number. The Fourteen Finance Commission, under the Chairmanship of YV Reddy, suggested a combined deficit of 6 percent (3 percent respectively for centre and states) for the period of 2015-16 to 2019-20.

Since fiscal deficit is equal to the increase in total government debt at the end of the year, the size of the deficit in successive years determines what happens to the Government Debt-to-GDP ratio. In India this ratio is 65 percent, which is much higher than that of most other countries. The saving grace is that most of the debt is serviceable in domestic currency which is still a comfortable position to be in.

2.0 PRESENT STATE OF KNOWLEDGE

To develop better understanding of various dimensions of fiscal deficit, the researcher presented review of available literature categorically.

(A) FISCAL DEFICIT AND ECONOMIC GROWTH

Zabinski (2014), Mohanty (2014), Taylor (2012), Goher and Ahmed (2011), Taylor and Proano (2011), Kipngetich (2009) and Adam and Bevan (2002) among others examined the relationship between fiscal deficit and economic growth and arrived at dissimilar inferences. Zabinski (2014) analyzed the choice and efficiency of the fiscal instruments applied in the Central and Eastern Europe countries to facilitate sustainable economic growth for a time spanning from 2001-02 to 2012-13. As a result author concluded that budget deficit may be utilized to achieve such objectives e.g. to maintain a political consensus. Still, a frequent side effect is an increased public debt. Mohanty (2014) examined both the short run and long run relationship between fiscal deficit and economic growth in India by covering the time period from 1970-71 to 2011-12. He found significant negative relationship between fiscal deficit and economic growth in the long run.

Taylor et al. (2012) examined the effect of changes in the deficit and its two components, spending and revenues on economic growth through the interaction between real primary deficit, real effective interest rate and real GDP growth. Using VAR and ADF from a period of study 2008-09 to 2011-12, they found strong positive impact of higher primary deficit on economic growth even when possible increases in the interest rate are taken into account. Goher and Ahmed (2011) investigated the impact of fiscal deficit on the investment and GDP growth of Pakistan using Dickey-Fuller (DF), Augmented Dickey-Fuller (ADF) unit root tests and two stages least square method. They concluded that fiscal deficit has strong adverse impact on economic growth of the country. Taylor and Proano (2011) examined long-run co-integration relationship from 1960 to 2010 among primary deficit, debt and GDP in USA. Econometric estimates verified the historical pattern and further suggested that there is

a strong positive effect on growth of a higher primary deficit, even when possible increases in the interest rate are taken into account.

Kipngetich (2009) analyzed the effect of fiscal measures - changes in the debt/GDP ratio, the tax rate and the proportion of development expenditure in total government spending on the economic growth for a period of 1963 to 2007. Using VAR, ARDL, moving average error term, OLS, and GMM estimates, the author revealed that budget deficits have a statistically significant effect on private consumption, private investments, money supply (M3), treasury bills rate, current account balance and real GDP. Adam and Bevan (2002) analyzed the impact of budget deficit on economic growth and its financing in developing countries for a period of 1980-2000. They found that debt stocks exacerbate adverse consequences of high deficits.

(B) FISCAL DEFICIT AND GOVERNMENT DEBT

Das (2016), Benjamin (2013), Singh (2013), Taylor (2011) and Emanuele (2010) among others examined the relationship between fiscal deficits and government debt and their observations were different. Das (2016) through Dynamic Panel Analysis examined how different types of government spending are responsible for the rise in debt in India from 1963 to 2013. By using Granger Causality and cointegration on decomposed total government expenditure in revenue and capital accounts he concluded that Government borrowing is more responsive to revenue expenditure than capital outlay.

Benjamin (2013) analyzed the causal relationship between fiscal deficit and public debt in Nigeria from 1970 to 2011. By using error correction estimates, Pair-wise Granger causality test, Johnson co-integration test he confirmed that domestic debt has greater impact on fiscal deficit than external debt. He suggested that the Nigerian government should consider appropriate mix of domestic debt and external debt as a mean of financing budget deficit. Singh (2013) made an attempt to analyze the interaction between budget deficit and national debt sharing India's experience from 2000 to 2010. Using Durbin Watson test, unit root test, mean test and Granger causality/ block erogeneity Wald tests he concluded that acceleration in fiscal deficit causes current

account deficit, which made the debt dynamics more unstable because of high and unstable debt to GDP ratio.

Taylor (2011) tried to analyze the long-run co-integration relationship among deficit, debt and GDP in USA from 1960 to 2010. The analysis of data verified the historical pattern and suggested that there is a strong positive effect on growth of a higher primary deficit, even when possible increases in the interest rate are taken into account. Emanuele (2010) also scrutinized the impact of fiscal deficits and public debt on long term interest rate, during 1980–2008 in G20 countries. He found an adverse impact of fiscal deterioration and public debt on interest rates.

(C) FISCAL DEFICIT, ITS DETERMINANTS AND MANAGEMENT

Zaw (2015), Bashir (2013), Bose (2012), Blejer (2012), Sanhita (2012), Kumar (2010), De (2012), Chakraborty (2007), Catao and Terrones (2005) and Usman (2004) among others made an attempt to analyze the relationship between fiscal deficit, its determinants and the management issues. They arrived at different conclusions.

Zaw (2015) studied fiscal management in Myanmar and delivered various valuable recommendations to overcome fiscal deficit. Bashir (2013) examined the dynamic interaction between fiscal deficits, current account imbalances and inflation in selected twelve African countries. By using Cointegration analysis and VAR models in Autoregressive Distributed Lag (ARDL) framework he concluded that large fiscal deficit is the cause of current account deficits, and that fiscal deficits are inflationary. This study further suggested that African countries should spend their resources on projects that will accelerate the level of growth and development.

Bose (2012) estimated the fiscal multipliers under two policy scenarios: when there is no restriction on the fiscal deficit and when there is a restriction on fiscal deficit as suggested by the Thirteenth Finance Commission. He observed higher impact of capital expenditure multiplier as compared to revenue expenditure multipliers in fiscal deficit and the positive changes in the proportion of fiscal deficit has been observed. Blejer (2012) discussed the methodological issues for the measurement of Fiscal Deficits and

observed that government deficit can signal different stances and therefore call for different fiscal policies.

Sanhita (2012) attempted to understand the rationale of fiscal adjustment from the mainstream and political economy approaches and also examined the crowding-out effects of fiscal imbalance and election in India, covered the period between 1980–81 and 2008–09. She found that there is a crowding-out effect of public investment on private investment and that elections do not significantly affect the fiscal deficit in India. De (2012) studied India's fiscal policy with a focus on historical trends, fiscal discipline frameworks and fiscal responses to the global financial crisis and also subsequent return to a fiscal consolidation covered the period from 1950-51 to 2008-09. After analyzing the historical pattern and the consequences she suggested that in future the focus would probably be on bringing in new tax reforms and better targeting of social expenditures. Kumar (2010) with a view to understand India's fiscal situation before and after the recent global financial crisis analyzed the trends, policy measures and the possible implications for economic recovery and long run growth of Indian economy.

Chakraborty (2007) analysed the real (direct) and financial crowding out in India between 1970–71 and 2002–03. Using an asymmetric vector autoregressive (VAR) model she found that there is no real crowding out between public and private investment; rather, complementarity is observed between the two. Catao and Terrones (2005) investigated whether fiscal deficits are inflationary in selected 107 developed, developing, low-inflationary and high-inflationary countries for the period 1960-2001. Examining the effects of budget deficits, GDP and the money supply on inflation they found that fiscal deficits are inflationary in both developing and high-inflation economies and that fiscal deficits are not inflationary in low-inflation and developed economies. Usman (2004) used Two-Stage Least Squares (2SLS) to investigate the relationship between government deficit and inflation in Nigeria. He concluded that inflation is a contributory factor to fiscal deficit and tended to be self-generating due to its effects on government expenditures and revenues.

(D) FISCAL DEFICIT, CURRENT ACCOUNT DEFICIT & SAVING - INVESTMENT GAP

Yusuf (2016), Sen (2016), Yusuf (2014), Halicioglu (2013), Bashir (2013), Mosre (2012), Tang (2009), Daly (2009), Kim (2008), Salvatore (2006), Baharumshah (2006), Marashdeh (2006), Rangarajan (2004) and others observed the relationship among Fiscal deficits, Current account deficits and Saving gaps, and they arrived at different conclusion.

Yusuf et al. (2016) examined the validity of the triplet deficit hypothesis for G7 countries during the period between 1994 and 2011. By using Unit root test, Panel Co-integration analysis and Panel Causality test, they found that budget deficit and savings gap have important role in current account deficit in terms of estimator results. Moreover, bi-directional causality between the current account deficit and the savings gap and between the budget deficit and the savings gap are determined. So, especially the savings gap has an important effect on the current account deficit and the budget deficit. That is, triplet deficit hypothesis is valid in G7. The authors further concluded that analysing the nature of relationship among current account deficit, budget deficit, and the savings gap may play a key role for policy makers.

Sen and Kaya (2016) made an attempt to check the validity of the twin and triple deficits hypotheses by using bootstrap panel Granger causality and the panel data set of six post-communist countries (Russia, Poland, Ukraine, Romania, Czech Republic, and Hungary) during 1994 to 2012. The results based on panel data analysis under cross-sectional dependence and country-specific heterogeneity neither supported the twin deficits nor triple deficits hypothesis for any of the countries considered. Ekrem et al. (2014) examined the validity of triple deficit hypothesis in Turkey during a period from 1960 to 2012. The results of unit root test and asymmetric causality test revealed bi-directional causality between current account deficit and budget deficit; and between the current account deficit and savings gaps. The authors thus found triplet deficit hypothesis true in case of Turkey.

Ferda Halicioglu (2013) made an attempt to check validity of twin deficit and the Feldstein-Horioka hypotheses in reference to Turkey over a period 1987-2004 by using

bounds testing approach to cointegration. He noted presence of twin deficit hypothesis and the Feldstein-Horioka puzzle in Turkey and concluded that though Turkey is integrated with world capital market but the degree of capital mobility is low as less than 1/5th of its domestic investment is financed through external funds. The results of augmented Granger-causality tests suggested no causality between the current account and budget deficits, both in the short-run and the long-run.

Bashir (2013) examined the dynamic relationship between fiscal deficits, current account imbalances and inflation in a sample of twelve African countries. He applied VAR models, Autoregressive Distributed Lags (ARDL) and Co-integration analysis to trace the impact of fiscal deficit on current account deficit in selected countries and reached to the conclusion that large fiscal deficit is the cause of current account deficits, and that fiscal deficits are inflationary. This study further suggested that African countries should spend their resources on projects that will accelerate the level of growth and development.

Mosre (2012) observed the long-run and short-run dynamics of fiscal policy and current account deficits. Using time series data of six variables namely; fiscal deficits as % of GDP, current account as % of GDP, government expenditure as % of GDP, natural log of real GDP, real exchange rate and real interest rate for four East Asian countries; South Korea, Malaysia, Singapore and Thailand, employed he found a long-run causality from fiscal deficits to current account deficits.

Lau and Tang (2009) made an attempt to examine the relationship between fiscal deficits and current account deficits in Cambodia for the period from 1996 to 2006. They found high degree positive correlation (0.83) between the selected variables. The results of Johansen cointegration tests indicated the presence of long-run relationship between fiscal deficits and current account deficits; this confirmed theoretical proposition of twin deficits. Daly and Siddiki (2009) investigated whether or not government fiscal deficits and real interest rates have a long-run relationship with current account deficits in 23 OECD countries using cointegration analysis with

structural breaks. They found strong evidences of relationship of fiscal deficits and real interest rates with the current account deficits.

Kim and Roubini (2008) examined the effect of government deficits on selected macroeconomic variables in US in the post Breton Wood period of flexible exchange rates covering time span of 1973-2004. The macroeconomic variables included government deficits as % of GDP, current account deficits as % of GDP, the real interest rate and the real exchange rate. They also included log of real GDP to control cyclical component of fiscal deficits. Contrary to Keynesian theory, their results indicated that an expansionary government budget deficit shock improves the current account and depreciates the real exchange rate.

Salvatore (2006) inspected whether large fiscal deficits cause current account deficits for the G-7 countries (United States, Japan, Germany, United Kingdom, France, Italy and Canada) using annual data for the period 1973-2005. The estimates suggested that higher domestic growth worsens the current account balance in all the selected countries; higher foreign growth improves the nation's current account balance. The fiscal deficits lagged by one year for all the selected countries are positively related and statistically significant to current account deficits. The study also examined the impact of global structural imbalances arising from the petroleum shocks which resulted into double digit inflation of the 1970s by using a dummy variable which assumed value of 0 for the period 1973-1980 and the value of 1 for the period 1981-2005. The results indicated that the coefficients of the dummy variable is statistically insignificant and does not change the sign, size as well as the statistical significance of the earlier results.

Baharumshah and Khalid (2006) studied the twin deficits hypothesis in four ASIAN countries namely; Indonesia, Malaysia, Philippines and Thailand for the period 1976-2000. The variables employed include the fiscal deficits, current account deficits, short-term interest rate and the nominal exchange rate. The results of Johansen cointegration test indicated a symmetric long run relationship between selected variables in Indonesia, Malaysia and Thailand except Philippines where there was no evidence of long-run relationship. However, a long-run relationship in case of Philippines was observed after making adjustments for structural breaks as suggested by Gregory and

Hansen (1996). The results of Granger causality test indicated bi-directional causality between the fiscal deficits and current account deficits in Malaysia and Philippines, unidirectional causality from fiscal deficits to current account deficits in Thailand and a reverse unidirectional causality from current account deficits to fiscal deficits in Indonesia. Rangarajan and Srivastava (2004) examined the long term profile of fiscal deficit and debt relative to GDP in India, with a view to analyze debt-deficit sustainability issues along with the considerations relevant for determining suitable medium and short-term fiscal policy stance. After reviewing the whole scenario they suggested that there is a clear need to bring down the combined debt-GDP ratio, in phased manner from its current level, which is in excess of 80 per cent of GDP.

3.0 THE PROBLEM

Fiscal deficit is major concerns in both developed and developing countries. It is caused by many macroeconomic factors, such as inflation, interest rates, public debt, saving - investment gap, exchange rates, GDP growth rate, current account deficit etc. The fiscal deficit in turn results in high real interest rates, thus crowding out private investment, hindering capital formation and adversely affecting economic growth and productivity. Another concern relates to the ability of monetary authorities and government to control inflation and increasing fiscal deficit, mainly because inflation erodes growth, confidence in the system, loss of competition, and the exacerbation of social tensions on fixed income earners.

On the other hand, Fiscal deficit affects the current account deficit in several ways, i.e. through changes in demand, interest rates, exchange rates and also the money supply. Large fiscal deficits induce domestic absorption and hence import expansion, causing current account deficits. Increase in the fiscal deficits also induces an upward pressure on interest rates, causing capital inflows and exchange rates to appreciate thereby worsening the current account. Huge government spending on non-tradable such as services or real estate sector can induce a real appreciation which in turn increases consumption toward tradable, thereby leading to current account deficits. Further,

large fiscal deficits lead to increase in money supply and increased price level, which in turn appreciates the real exchange rate and deteriorates the current account balance.

The persistent association of fiscal deficit and current account deficit, popularly known as the Twin Deficit Hypothesis (TDH) is studied by many researchers, but the role of private savings gap in the emergence of current account deficit has often been ignored. When domestic investments are greater than domestic savings, the financing of this gap from abroad causes the savings-investment balance to play a role, along with the fiscal deficit, in the emergence of current account deficit. This means that the fiscal balance, savings-investment balance, and current accounts balance of a country all together may be in deficit.

3.1 RESEARCH MOTIVATION

After review of existing literature concerned with the problem under study and the stylized facts in Indian context, the researcher has identified some pertinent issues which need to be addressed during study. These are:

- Whether, apart from the magnitude, the quality of Fiscal Deficit has progressively become more of a problem?
- How and in what manner macroeconomic factors, particularly, inflation, interest rates, public debt, saving - investment gap, exchange rates, GDP growth rate and current account deficit influenced growth of Fiscal Deficit in India?
- How and in what manner Fiscal Deficit influenced Investment and Economic Growth in India?
- What is the inter-linkage between budget deficit, savings-investment gap and current account deficit in Indian context?
- Why the Government of India has not been able to check the menace of fiscal deficit even though there has been a consensus to do so; and why fiscal consolidation which followed in 1991 in India failed to give the desired results?
- Whether FRBM Act enacted in 2003 for stabilizing debt and deficits in India could support fiscal deficit management mechanism?
- What are the ways to tackle the problem of fiscal deficit in India?

To answer these questions in precise and scientific manner, the researcher has designed following objectives and specific research methodology.

4.0 RESEARCH OBJECTIVES

Present study aims to achieving the following objectives.

1. To scrutinize growth trajectory and intricacies of fiscal deficit in India.
2. To analyze the impact of prominent macroeconomic factors on fiscal deficit in India.
3. To examine the validity of triplet deficit hypothesis in India.
4. To analyze the impact of fiscal deficit on economic growth in India.
5. To investigate the issues concerned with management of fiscal deficit in India.

5.0 RESEARCH METHODOLOGY

To accomplish above objectives the specific methodology sketched out is as follow:

1. The Growth trajectory and intricacies of fiscal deficit in India will be scrutinized by using secondary data available in the publications of Government of India, international economic/ financial organizations and the regulatory authorities.
2. The determinants of fiscal deficit will be identified on the basis of review of existing literature and researcher's own understanding. The impact of identified factors on fiscal deficit will be traced by using Unit Root Test, Granger Causality test and OLS (Multiple regressions)/ Johansen Co-integration test.
3. The validity of triplet deficit hypothesis in India will be examined by using Unit Root Test and Granger Causality test.
4. The Impact of fiscal deficit on India's Economic Growth will be traced by using Unit Root test, Granger Causality and OLS (Multiple regressions)/ Johansen Co-integration test.
5. The issues concerned with sustainability of Fiscal Deficit in India will be studied through review of various economic surveys and also by considering views of officials/ executives of policy research departments of Govt. of India/ RBI, researcher and academicians working on this issues related to fiscal deficit.

DATA SERIES: Annual data spanning from 1991 to 2017.

DATA SOURCES: The researcher will collect secondary information from Books, Journals, Reports, Working papers, Newspapers and Statistical data base of RBI. The information will also be collected from official websites of India.

TOOLS TO BE USED: Besides basic descriptive (Mean, Dispersion and Coefficient of Variation), the researcher plans to use following statistical/ econometrics tools for analyzing collecting data are as follow:

- 1. Unit Root (ADF/PP) Test:** It is must to check stationarity of time series data before further investigation, particularly regression analysis. If we regress a time series variable on another time series variables using OLS without testing stationarity, estimation can obtain a very high r^2 (though meaningful relationship between the variables may not exist). A series is said to be stationary if the statistical properties such as mean, variance, autocorrelation etc. are all constant overtime. Most popular tests of stationarity (unit root tests) available in econometrics literature are Dickey-Fuller (DF), Augmented Dickey-Fuller (ADF) and Phillips and Perron (PP) test.
- 2. Granger Causality Test:** It seeks to determine whether past values of a variable help to predict changes in another variable. Variable X1 is Granger caused by variable X2 if variable X2 assists in predicting the value of variable X1. If this is the case, it means that the lagged values of variable X2 are statistically significant in explaining variable X1. In the present study it will be used to examine the nature and causation relationship among factors under consideration.
- 3. Multiple Regression/Ordinary Least Square (OLS) Estimates:** It is used to test the causation relation among the selected variables. The fundamental equation for simple linear regression is $Y = \alpha + \beta x + U$. Here, α and β are the parameters to be estimated while U is a stochastic error term. This states that there is a one way causation between X and Y, in other words the value of dependent variables Y depends on the values of independent variable X. However in reality dependent variable Y is not only influenced by X, there can be some other variables.

In case of multiple regressions there may be a one or more independent variables the multiple regression equation is estimated using ordinary least square (OLS) methods. In the present study it will be used to estimate the causation between fiscal deficit and selected macroeconomic variables.

- 4. Johansen Co-integration Test:** It quantifies co-integrating relationship by examining the number of independent linear combinations (k) for the time series variables set that yields a stationary process. In the present study, it will be used to determine the existence of a long-run equilibrium relationship among the variables under consideration.

6.0 PROPOSED CHAPTER PLAN

- Chapter 1: Introduction
- Chapter 2: Facets of Fiscal Deficit in India
- Chapter 3: Macroeconomic Determinants of Fiscal Deficit in India
- Chapter 4: Triplet Deficit Hypothesis: An Examination in Indian Context
- Chapter 5: Fiscal Deficit and India's Economic Growth
- Chapter 6: Management of Fiscal Deficit in India
- Chapter 7: Findings and Conclusion

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