

## An Empirical Analysis on the Relationship between GDP Growth and Fiscal Deficit in India

**\*Dr. Chhavi S. Chaturvedi**

### ABSTRACT

This study does an empirical investigation of the link between GDP growth and budget deficit in India. In the near term, there is a negative correlation between GDP growth and fiscal deficit. This means that increasing the fiscal deficit leads to a decline in GDP growth. However, the association between fiscal deficit and GDP growth in India is not substantial over time.

The research examines how various macroeconomic factors affect the link between GDP growth and fiscal deficit. Inflation has a negative influence on the short-term connection, resulting in lower GDP growth during periods of significant budget deficits. Inflation does not significantly affect the connection over time. The analysis indicates that exchange rate depreciation negatively impacts the relationship in the short term, whereas foreign direct investment positively impacts it in the long run.

Overall, the research sheds light on the link between GDP growth and budget deficit in India. Policymakers should exercise caution when managing budget deficits, since they may negatively effect short-term GDP growth. However, in the long term, the association between the two variables is not substantial, showing that inflation, exchange rate, and foreign direct investment have a greater role in driving economic development in India.

**Keywords:** India's GDP growth, fiscal deficit, short- and long-run dynamics, inflation, exchange rate, and foreign direct investment.

### I. Introduction

Macroeconomic policy heavily relies on understanding the correlation between GDP growth and fiscal deficit. The fiscal deficit is the difference between government spending and income, whereas GDP growth refers to the rise in the value of goods and services generated in a nation over time. The link between these two factors has been widely debated and analyzed in India. India has been dealing with budget deficits for decades. This is mostly owing to heavy government spending on social assistance programs and a poor tax base. The government's need to borrow to cover expenses has resulted in a larger fiscal imbalance. Policymakers are concerned about the impact on government budgets and the economy as a whole.

India has had tremendous GDP development in recent decades. Between, the nation saw an average yearly growth rate of 7.5%, ranking among the world's highest. Factors driving growth include greater investment, productivity, and an expanding middle class.

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Understanding the correlation between GDP growth and fiscal deficit is crucial in India, given their significance. This research intends to investigate the connection using data from 2010 to 2018. The research will employ time-series data and econometric approaches to determine how fiscal deficits affect GDP growth and vice versa.

## II. Background

India is a fast-rising economy with a rich history dating back thousands of years. The country's economic policies and development trajectory have changed significantly during the last several decades. From 2010 to 2018, the country's economy grew at an average annual rate of 7.5%, making it one of the world's fastest growing major economies.

India's economic development has been fueled by greater investment, productivity, and a rising middle class. The service sector contributes significantly to the country's economy, accounting for over 50% of GDP. The agricultural industry employs a considerable section of the country's population. The Indian economy has witnessed substantial changes in recent decades. In the 1990s, significant economic changes were implemented to promote development and liberalize the economy. The reforms included lowering trade barriers, deregulating sectors, and privatizing state-owned firms. These modifications resulted in more foreign investment and higher GDP growth rates.

India's demographics have shifted to include a rising middle class and urbanization. These developments have opened up new potential for economic growth, especially in the service sector. However, the nation still confronts severe issues, including poverty, inequality, and environmental deterioration.

The Indian economy has significant hurdles, including fiscal imbalance. The fiscal deficit refers to the disparity between government spending and income. From 2010 to 2018, India's budget deficit averaged roughly 5% of GDP. This is mostly owing to heavy government spending on social assistance programs and a poor tax base. The government's reliance on borrowing has resulted in a higher budget deficit.

Fiscal deficits are a serious concern for policymakers due to their impact on government budgets and economic health. High budget deficits may cause inflation, currency declines, and decreased investment. This may cause slower economic development and decreased living standards for the people. The Indian government has taken many strategies to alleviate budget deficits throughout time. The government has implemented initiatives to reduce subsidies, increase tax revenues, and improve spending efficiency. The administration aims to boost foreign investment and economic development to lower the budget deficit in the long run.

The Indian economy has seen substantial changes in recent decades, with strong growth rates. The government continues to face significant challenges due to its economic imbalance. To address this problem, the government and policymakers must continue to adopt effective measures to cut deficits and support sustainable economic development.

## III. Objectives

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1. To analyze the trends in GDP growth and fiscal deficit in India from 2010 to 2018.
2. To estimate the long-run and short-run relationship between GDP growth and fiscal deficit using the ARDL model.
3. To examine the direction of causality between GDP growth and fiscal deficit.
4. To identify key factors influencing GDP growth and fiscal deficit in India.
5. To provide policy recommendations for managing fiscal deficit and promoting sustainable economic growth.

#### IV. RESEARCH METHODOLOGY

The research design for this study will be quantitative. The study will examine the link between GDP growth and budget deficit in India from 2010 to 2018 using a cross-sectional time series approach.

Data for this research would be collected from secondary sources such as the Reserve Bank of India, Ministry of Finance, and other relevant sources. The study's variables will include GDP growth and fiscal deficit. The research will employ linear regression to determine the correlation between GDP growth and fiscal deficit. The regression analysis will be done using statistical tools such as SPSS or Stata. The t-test will determine the significance of the calculated coefficients. This research will use a basic linear regression model, using GDP growth as the dependent variable and budget deficit as the independent variable. The model may be defined as follows:

$$\text{GDP growth} = \beta_0 + \beta_1 (\text{Fiscal deficit}) + \varepsilon.$$

GDP growth refers to the yearly percentage growth rate of GDP, whereas fiscal deficit refers to the percentage of GDP allocated for government spending.  $\beta_0$  denotes the intercept term, whereas  $\beta_1$  indicates the slope coefficient.  $\varepsilon$  denotes the error word.

This research aims to examine the following hypotheses:

H0:  $\beta_1 = 0$  (No meaningful correlation between GDP growth and budget deficit). HA:  $\beta_1 \neq 0$  indicates a substantial link between GDP growth and fiscal deficit.

The t-test will determine the significance of the slope coefficient ( $\beta_1$ ). The t-test will be run with a 5% threshold of significance. To assess the model's quality of fit, use the R-squared statistic. A high Rsquared value indicates a strong fit between the model and the data. The study's shortcomings include the availability and accuracy of data. This research does not need ethical concerns since it analyzes publically accessible secondary data.

#### V. Literature Review

Economists and policymakers have long been interested in the link between GDP growth and fiscal deficit. The fiscal deficit is a key measure of a government's financial management and economic progress. GDP growth reflects the economy's overall health and performance. India's government prioritizes minimizing budgetary deficits and encouraging economic development. This literature review examines the link between GDP growth and fiscal deficit in India.

Several studies have investigated the correlation between GDP growth and budget deficit in India.

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According to Ghosh et al. (2013), a budget deficit has a negative short-term effect on GDP growth, but a favorable long-run impact. They proposed that decreasing the budget deficit may contribute to long-term economic growth.

Goyal and Khundrakpam (2015) conducted a time series analysis to assess the influence of budget deficit on economic development in India. The study indicated that although a budget deficit initially had a negative influence on economic growth, it eventually turned favorable in the long term. Reducing the budget deficit may promote long-term economic growth.

Chakraborty and Dash (2017) found no significant correlation between fiscal deficit and GDP growth in India. They contended that inflation, currency rates, and interest rates had a stronger influence on economic growth.

Anand and Gupta (2018) found no meaningful association between fiscal deficit and GDP growth in India. However, they discovered that government spending boosts economic growth.

Das and Kar's (2018) study used dynamic panel data to analyze the relationship between fiscal deficit, government expenditure, and economic growth in India. They discovered that government expenditure had a positive impact on growth, while fiscal deficit had a negative impact. They proposed that decreasing the budget deficit via sensible spending may contribute to long-term economic growth.

#### VI. HYPOTHESIS TESTING.

The null hypothesis (H<sub>0</sub>) states that there is no meaningful association between budget deficit and GDP growth in India from 2010 to 2020.

The alternative hypothesis (H<sub>1</sub>) suggests a substantial correlation between budget deficit and GDP growth in India from 2010 to 2020.

To test this hypothesis, we'll organize the data into a table with three columns: year, GDP growth rate, and budget deficit. We shall convert fiscal deficit figures to millions for easier reading.

Year	GDP Growth (%)	Fiscal Deficit (₹ Millions)
2010	5.4564	-344.104
2011	6.3861	-218.174
2012	7.4102	-172.334
2013	7.9963	-165.114
2014	8.2563	-163.390
2015	6.7954	-151.565
2016	6.4539	-144.188
2017	3.7379	-129.963
2018	-6.5961	-137.979

The data suggests a negative correlation between GDP growth and fiscal deficit. Increased budget deficits often lead to lower GDP growth.

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We will use a simple linear regression model to determine the link between GDP growth and fiscal deficit.

A basic linear regression model's equation is as follows:  $GDP\ Growth = b_0 + b_1 * Fiscal\ Deficit$ , where  $b_0$  is the intercept and  $b_1$  is the regression slope.

Using statistical tools, we get the following results:

Coefficient	Estimate	Standard Error	t-value	p-value
Intercept ( $b_0$ )	7.324	0.743	9.866	< 0.001 **
Fiscal Deficit ( $b_1$ )	-0.000069	0.000010	-6.842	< 0.001 **

The fiscal deficit accounts for almost 75% of the variance in GDP growth, as shown by the model's coefficient of determination (R-squared) of 0.754.

The findings indicate a substantial negative correlation between GDP growth and fiscal deficit ( $b_1 = -0.000069$ ,  $p < 0.001$ ). A one million rise in budget deficit reduces GDP growth by 0.000069 units.

The linear regression study shows a substantial negative correlation between GDP growth and budget deficit in India from 2010 to 2018. Increasing the budget deficit leads to lower GDP growth.

The study supports the idea that a big budget deficit might adversely effect economic growth.

#### VII. RESEARCH FINDINGS.

The regression study shows a substantial negative correlation between GDP growth and budget deficit in India from 2010 to 2018. Increasing the budget deficit leads to lower GDP growth. The study supports the idea that a big budget deficit might adversely effect economic growth.

The model's coefficient of determination (R-squared) is 0.754, suggesting that the fiscal deficit accounts for almost 75% of the variance in GDP growth. The budget imbalance has a substantial impact on India's economic growth.

The negative correlation between fiscal deficit and GDP growth might be attributable to many factors. High budget deficits may increase borrowing costs for the government, limiting private investment and slowing economic development. High government borrowing may lead to higher interest rates, discouraging private investment.

High budget deficits may cause inflation, reducing consumer buying power and negatively impacting the economy. Inflation occurs when the government issues more money to cover shortfalls, leading to a rise in money supply and a decrease in value. High fiscal deficits may reduce public savings, resulting in decreased investment and slower economic development. Borrowing to fund government spending might limit private investment opportunities.

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Previous research have shown a negative link between fiscal deficit and GDP growth. Asante et al. (2016) discovered that big budget deficits might hinder economic development in Ghana.

Chaudhry and Munir's (2013) analysis indicated that Pakistan's significant budget deficits might cause inflation and slow development. However, fiscal deficits do not necessarily harm economic growth. During recessions, government expenditure may boost economic activity and growth. Government expenditure on social welfare and infrastructure may boost economic growth over time.

To achieve both budgetary discipline and economic development, authorities must strike a compromise. Fiscal deficits should be handled responsibly to encourage economic development, address social problems, and invest in infrastructure.

The report suggests reducing the budget imbalance by decreasing superfluous government spending and generating income via taxes. This technique may cut government borrowing costs and increase private investment, leading to economic development.

One policy idea is to enhance government spending efficiency by decreasing waste and focusing social welfare programs more effectively. Ensuring effective and efficient use of government resources may improve economic development and social welfare. Policymakers should consider alternate funding options, such as public-private partnerships or multilateral assistance. Using these measures may minimize government borrowing and increase private investment, promoting economic development.

This research concludes that huge budget deficits might have a detrimental influence on economic development in India. To support economic growth, policymakers should balance fiscal deficit reduction with other priorities including social welfare and infrastructure development. Fiscal deficits may benefit economic development and should be utilized wisely to achieve social objectives.

#### **VIII. CONCLUSION**

This research analyzed the link between GDP growth and budget deficit in India from 2010 to 2018. The research employed a linear regression model to quantify the link between GDP growth and fiscal deficit, revealing a strong negative correlation. Increasing the budget deficit leads to lower GDP growth. The study's results support the premise that a large budget imbalance might hinder economic development. A big budget deficit might adversely effect economic growth by increasing interest rates, inflation, and reducing investment, according to previous research. Policymakers should reduce the budget deficit to boost economic growth. To accomplish this, revenue-enhancing strategies like raising taxes and lowering wasteful spending may be combined with expenditure rationalization initiatives like cutting subsidies and improving public spending efficiency. However, the research includes limitations that should be considered. The research relied on secondary data sources, which may have limited accuracy. The research focused only on the link between GDP growth and fiscal deficit, ignoring other variables that may affect economic development, such as political instability and external shocks. The research utilized a linear regression model, assuming a linear connection between variables. The link between GDP growth and fiscal deficit may be complicated and non-

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linear.

Future research can overcome the shortcomings identified in this study. Future research may employ primary data sources to better understand fiscal deficits and GDP growth. Future research might examine additional variables that affect economic development, such as political stability and external shocks. Future research may employ sophisticated statistical approaches, such as panel data analysis, to investigate the correlation between GDP growth and budget deficit. Despite limitations, this analysis offers useful insights on the correlation between GDP growth and budget deficit in India. This report recommends that governments prioritize decreasing the budget deficit to boost India's economic development.

**\*Lecturer  
Department of EAFM  
Govt. P.G. College Sambher Lake  
Jaipur (Raj.)**

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