

Fiscal Imbalances and Economic Growth: Evidence from India

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Abstract

A fiscal deficit plays a crucial role in a nation's macroeconomic framework, as it enables the government to finance infrastructure, support economic growth, and counter-economic emergencies or crises effectively. However, its effective management is essential for long-term fiscal sustainability. Owing to its dynamic nature, the contribution of fiscal deficit to economic performance varies across countries due to structural and institutional factors. Against this backdrop, the present study investigates the impact of deficit on India's economic growth in India over the period 1990-2024. The "Autoregressive Distributed Lag (ARDL)" approach is used to capture both short-run and long-run dynamics of the model. Empirical results signify that fiscal deficit has a contractionary effect on economic growth in short run, highlighting inefficiencies and crowding-out effects associated with deficit financing. Furthermore, COVID-19 caused a significant and measurable drop in economic performance in the short-run.

Keywords: Fiscal deficit, Economic Growth, India, ARDL model
JEL Classification: H62, F43, O47, C22

Introduction

As time passed, the association between fiscal deficit and economic growth remained widely debated around the world. Government often used fiscal deficit as an instrument to stimulate economic activity, but its impact is caused in the long run. As fiscal deficit plays an important role in promoting sustainable development in emerging nations like India.

From a theoretical perspective, the Keynesian view states that deficit financing stimulates aggregate demand during periods of economic emergencies. In contrast neoclassical approach argues that fiscal deficits hinder economic expansion in the long term by reducing national savings and crowding out private investment, while the Ricardian Equivalence hypothesis suggests a neutral effect, as forward-looking individuals' nature adjusts their behaviour in anticipation of future taxes due to present debt.

Empirical evidence shows that effect of the fiscal imbalance on expansion is mixed and inconclusive in nature, depending upon expenditure composition, size and institutional quality. Recent studies further indicate that this relationship may be nonlinear; to a certain threshold, deficit acts as an instrument of economic expansion, beyond which impact becomes adverse.

In this context, the present study tried to investigate how public debt and fiscal deficits impact India's economic growth from 1990 to 2024 by using the "Autoregressive Distributed Lag (ARDL)" model. The empirical evidence supports that an increase in fiscal deficit has a contractionary shock effect on growth in the short term, though it becomes insignificant in the long run.

The study is organised as follows: the first provides an introduction, the second reviews existing literature, the third presents data and methodological framework, the fourth presents empirical results, and the final section discuss conclusion along with policy implications.

2. Review of Literature:

2.1 Theoretical perspectives

As time passed, macroeconomic ideas about the relationship between fiscal deficit and economic growth have changed, reflecting views on government intervention and market efficiency. (Keynes, 1936) stated that when expenditure exceeds the revenue, it creates a gap, which is filled by the fiscal deficit. That extra amount of expenditure by the government through deficit financing can increase the aggregate demand, like encouraging firms to expand production, create jobs, and boost income levels in the economy.

In contrast, the Neoclassical view, Smith (1776) and Ricardo (1817), and further developed by Solow (1956) and Feldstein (1980), argues that fiscal deficit harms economic growth in the long run. As deficit financing leads to an increase in higher interest rates, loanable funds will become costly. This may discourage private investment, by slowing capital formation and crowding- out effect.

The Ricardian Equivalence Hypothesis (Ricardo, 1817) and later formalised by Barro (1974), offers a neutral view on the link between fiscal deficits and economic growth. As individuals are rational and forward-looking in nature, considers the

future effect of current fiscal policies. When the government increase its expenditure through the tool of fiscal deficit, households expect a rise in taxes in future to repay the past debt. In response, people will save at present to repay the increased tax in future.

2.2. Empirical Literature

Empirical evidence from both developing and advanced economies suggests that fiscal deficits harm long-term economic growth. Tung (2018) shows that fiscal deficits in Vietnam reduce private investment, foreign direct investment, and net exports, as a result it weakening economic performance in the long run. Similar findings are reported by Fatima et al. (2011) for Pakistan, where fiscal imbalances hinder growth through reduced investment and institutional weaknesses. Sharma and Mittal (2019) and Mohanty (2012) confirm that fiscal deficits negatively affect growth, particularly through inflationary pressures and post-reform structural changes in India. Masheed et al. (2024) found a similar adverse impact in Pakistan and Afghanistan, while Bohach and Paientko (2021) show that reduction of fiscal deficit promotes economic growth in advanced European economies, although the effect remains weak in developing nations.

Some of the empirical evidence demonstrates that fiscal deficits can promote economic growth. through stimulating aggregate demand. Umaru and Gatawa (2014) find that fiscal deficits positively influence the Nigerian economy when directed toward infrastructure and human capital development, whereas unproductive spending has insignificant effects. Similarly, Odhiambo et al. (2013) show that in Kenya, deficit-financed expenditure enhances productivity by facilitating the provision of public goods and infrastructure. Navaratnam (2016) also found cross-country variation, as fiscal deficit tends to have a negative impact on South Asian economies, whereas have a favourable impact on economic growth in Nepal.

Beyond the traditional literature, a growing body of empirical results moves towards a nonlinear and threshold approach. Iqbal et al. (2017) found that approximately 5.57% for Pakistan's deficit can grow supportive. Whereas Aero and Ogundipe (2016) state that around 5% moderate fiscal deficit leads to growth-oriented and excessive deficits harm. In the case of Indian states, Behera and Mallick (2022) find that fiscal deficits boost economic growth up to 2.33% of GSDP, after which the effect turns negative. Adam and Bevan (2002) support that excessive fiscal deficit tends to have an adverse consequence of an economy. For instance, Bhoir and Dayre (2015) and Raju and Mukherjee (2010) report that fiscal deficit has no significant impact on economic growth in the long run in India. Similarly, Van and Sudhipongpracha (2015) state that economic growth in Vietnam remains largely insensitive to variations in fiscal deficit levels.

The above theoretical and empirical results indicate that the impact of fiscal deficit on economic growth is not uniform but rather complex, depending on how the deficit financed amount is utilised. The relationship between fiscal deficit and economic growth varies across countries and institutions.

3. Data Sources and Research Methodology

3.1 Variable Definition

Data used for this study is based on time-series annual observations and covers 35 years starting from 1990 to 2024. The dataset captures key macroeconomic indicators for the Indian economy. The primary dependent variable GDP growth rate (GDPR). The main explanatory variables include the natural logarithm of the Gross Fiscal Deficit (ln GFD), Gross Capital Formation (GCF), Trade Openness (TO), and Inflation (INF). The data of GDPR, GCF, TO and INF is taken from World Development Indicator of World Bank. Additionally, the data of GFD is collected from RBI.

Table - 3.1 Descriptive Analysis of Variables

Variable	Definition	Sources
GDPR	Real Gross Domestic Product Growth Rate	WDI
ln GFD	Natural Logarithm of the Gross Fiscal Deficit	RBI
GCF	Gross Capital Formation	WDI
TO	Trade Openness	WDI
INF	Inflation Rate (Consumer Price Index)	WDI

3.2 Descriptive Statistics and Correlation

The following are the descriptive statistics that are important to help us analyse the trend in the economy. From the period from 1984 to 2018, India experienced an average annual growth rate of around 6.12%.

The maximum growth rate observed in the dataset is 9.69%, while the minimum growth rate is -5.78%.

Table – 3.2 Descriptive Analysis

Indicator	Obs	Mean	Std. dev.	Min	Max
GDPR	35	6.117252	2.833464	-5.77773	9.689592
lnGFD	35	12.41028	1.196954	10.50026	14.41341
GCF	35	31.79915	5.175905	22.71641	41.9508
TO	35	36.64996	12.5338	15.50626	55.79372
INF	35	7.07854	3.033002	3.328173	13.87025

Next, we review the correlation matrix. Economic growth (GDPR) shares a favourable association with gross capital formation (0.309) and trade openness (0.204). However, growth has an unfavourable association with inflation (-0.1298). The basic correlation between growth and the fiscal deficit is weakly positive at 0.0113. Because simple correlation cannot prove causation, we move to a dynamic econometric model.

3.3 Econometric Methodology

We use the “Autoregressive Distributed Lag (ARDL)” bounds testing approach. This method is excellent for small sample sizes. It also allows us to measure short-run shocks and long-run trends at the same time. To prevent the massive 2020 pandemic shock from ruining the mathematical trend, we also introduce an exogenous structural break dummy variable (COVID-19) into the model.

Table – 3.3 Correlation Matrix

	GDPR	lnGFD	GCF	TO	INF
GDPR	1				
lnGFD	0.0113	1			
GCF	0.309	0.4318	1		
TO	0.204	0.7754	0.8397	1	
INF	-0.1298	-0.3413	-0.0839	-0.1753	1

4. Empirical Findings

4.1 Stationarity Assessment of Variables

Before running the main model, we must check the stationarity of our data using the “Augmented Dickey-Fuller (ADF)” Unit Root Test. The ADF results show a mixed order of integration. Real GDP growth is strictly stationary at the level. However, the fiscal deficit, capital formation, trade openness, and inflation only become stationary after the first difference.

Table- 4.1 Augmented Dickey–Fuller Test Results

Variable	Test Statistic	Prob	Test Statistic	Prob	Order of Integration
GDPR	-5.447***	0.000	-	-	I (0)
lnGFD	-0.405	0.9093	-6.057***	0.000	I (1)
GCF	-1.765	0.3978	-8.277***	0.000	I (1)
TO	-1.614	0.4759	-5.192***	0.000	I (1)
INF	-2.808*	0.0571	-8.157***	0.000	I (1)

4.2 Cointegration Analysis Using the ARDL Bounds Test

Since the unit root test confirms a correct mix of level and first-difference variables. We proceed to the “ARDL Bounds Test”.

Table - 1.2 Cointegration Bound test

Test Statistic	Value	Significance	Lower Critical	Upper Critical
		n=33		
F-stat	11.895	5%	3.336	4.746
		1%	4.802	6.618

This step determines if the variables move together over the long term. The test yields a strong F-statistic of 11.895. For a finite sample of 33 observations, this value easily surpasses the 1% upper-bound critical value of 6.618. Therefore, we decisively reject the null hypothesis (H_0) of no cointegration. This confirms a robust, long-run equilibrium relationship among economic growth, the fiscal deficit and the control variables.

4.3 Short-Term Dynamics and Error-Correction Process

The short-run results reveal how the economy reacts to immediate shocks. Table 4.3 shows the error correction form. The “Error Correction Term (ECM)” is -0.8593, and it is statistically significant ($p = 0.000$). This means the Indian economy is highly resilient. It naturally corrects roughly 85.9% of any short-term economic imbalance within a single year.

Table - 4.3 Short-Run Adjustment Results

Variable	Coff	S.E.	t-stat	Prob
$\Delta \ln \text{GFD}_t$	-5.2767	1.1357	-4.65	0.000
$\Delta \ln \text{GFD}_{t-1}$	2.0248	1.3859	1.46	0.158
ΔINF_t	0.0689	0.1218	0.57	0.577
ΔINF_{t-1}	0.2918	0.1359	2.15	0.043
COVID-19 Dummy	-9.9417	1.6804	-5.92	0.000
ECM Term	-0.8593	0.1132	-7.59	0.000

However, this rapid recovery does not make the economy immune to immediate shocks. The short-run coefficient for the fiscal deficit ($\Delta \ln \text{GFD}_t$) is -5.2767, which is statistically significant. This means that a sudden, massive expansion in absolute government borrowing exerts an immediate and severe contractionary drag on the GDP growth rate for that same year. Furthermore, the COVID-19 dummy variable is highly significant with a massive negative coefficient of -9.9417, validating the devastating short-term economic freeze caused by the pandemic lockdowns.

4.4 Long-Run Impacts

While the short-run effects are severe, the long-run narrative changes completely. Over the 35-year study period, the long-run coefficient for the fiscal deficit is -0.1334. More importantly, it is entirely insignificant with a p-value of 0.844.

Table - 4.4 Results of the Long-Run Analysis

Variable	Coff	Std. Error	t-stat	Prob
lnGFD	-0.1334	0.6679	-0.2	0.844
GCF	-0.1166	0.1892	-0.62	0.544
TO	0.0687	0.1062	0.65	0.524
INF	-0.0551	0.1339	-0.41	0.685
Constant	8.8969	8.5556	1.04	0.31

Here, none of the variables shows statistical significance in the long run. This is the core finding of the paper. This confirms that the adverse effect of the boost in the absolute fiscal deficit is temporary in nature only. The quick adaptation capacity of the Indian economy ensures that the high level of borrowings by the government does not affect the long-term growth path.

4.5 Diagnostic Checking

We employed a number of diagnostic tests to validate the structural integrity of our model. “Breusch-Godfrey LM Test” demonstrates that there is no evidence of serial correlation ($p=0.8814$), whereas the ARCH LM Test ($p=0.9475$) and Breusch-Pagan Test ($p=0.5286$) both provide evidence that the model's variance remains constant and does not experience any volatility clustering. The Skewness/Kurtosis Test indicates that the residuum is normally distributed ($p=0.0636$). The Ramsey RESET Test provides clear evidence that no such variables are omitted and that the model is fully specified ($p=0.322$)

Table - 4.5 Diagnostic Test Result

Diagnostic Test	(H ₀)	Test Statistic	Prob	Decision
Breusch-Godfrey Test	LM No correlation	$X^2 = 0.253$	0.8814	Fail to reject H ₀
ARCH LM Test	No ARCH effects	$X^2 = 0.004$	0.9475	Fail to reject H ₀
Breusch-Pagan Test	Constant variance (Homoskedasticity)	$X^2 = 0.400$	0.5286	Fail to reject H ₀
Ramsey RESET Test	Model has no omitted variables	$F = 1.240$	0.322	Fail to reject H ₀
Skewness/Kurtosis Test	Residuals are normally distributed	$X^2 = 5.510$	0.0636	Fail to reject H ₀

The Cumulative Sum of Squares (CUSUMSQ) test was used to determine whether the model's structure remained stable throughout the entire 35-year study period using the residuals from the best ARDL model. The CUSUMSQ line stays entirely inside the 5% boundaries of significance from about 1998 until 2024, as seen in Figure 1. This graphical evidence clearly demonstrates that both the model's variance and estimated parameters have exhibited structural stability over the entire period of interest. Therefore, there is a very high degree of both robustness and reliability in the empirical results obtained through this study, making them useful for the purpose of developing a comprehensive fiscal policy that will be effective in the future.

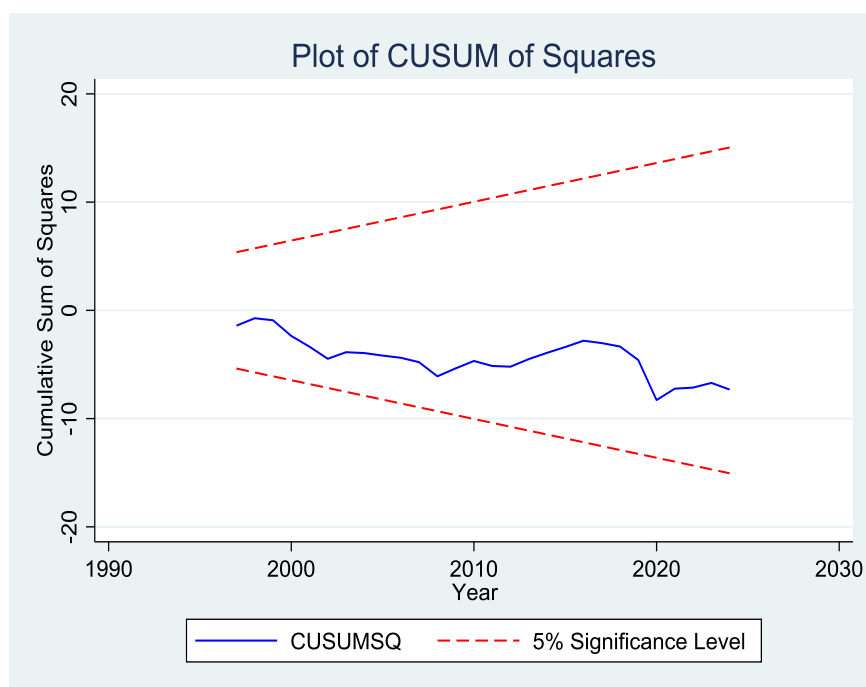


Figure 1 Plot of CUSUM of Squares

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