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## Public Debt Economic Growth Nexus: How Effective to Allay Resetting Economic Growth of India

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**ABSTRACT:** There are two primary schools of thought in contemporary debates on the causes of India's debt crisis: those linked to changes in the world economy and those connected to errors in domestic policy. Because of the instability of the world economy, developing countries like India are forced to borrow money from national and international institutions to make up the difference in their spending. For these capital-poor economies to improve their capital stock and stable levels of per capita output, borrowing is considered essential. According to conventional economic theory, public debt can temporarily increase economic development by promoting aggregate demand. Nonetheless, the majority of empirical research conducted in many nations shows that public debt and long-term economic growth are negatively correlated. Theoretically, it is still unclear how much public debt has contributed to India's economic expansion. The purpose of this study was to investigate how public debt affected India's economic growth from 1991 and 2022. The study looked at the connection between India's economic expansion and public debt. The report suggests that borrowed money be used to diversify the productive capacities of the economy and advises cautious management of governmental debts. This would produce sufficient resources to settle the obligations without having a negative impact on the economy.

**KEYWORDS:** External Debt, Domestic Debt, Economic Growth

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### 1. INTRODUCTION

From 1991 to 2022, the effect of public debt on India's economic growth is a complex topic including a wide range of social, political, and economic variables. This is a thorough summary of how public debt has affected India's economic expansion over this time. There are two primary theories as to why India's debt load is so high. Some believe that India's economy is suffering because of global economic issues, such as recessions or depressions in other nations. As a result, the government must take out loans to cover the loss. Some believe that India's own policy errors are to blame for the country's excessive spending and inadequate saving.

Though it's a complex problem that specialists are currently attempting to solve, there is some truth to both theories. According to the second line of reasoning, a government borrows money domestically or abroad to pay for its deficit spending when it is unable to meet its obligations, both foreign and domestic. The justification for government borrowing comes from neo-classical growth theories, which highlight the need for borrowing in capital-scarce economies in order to promote capital accumulation and reach a stable level of per capita production.

Conversely, Keynesian economic theory suggests that lower tax rates and more government expenditure can boost aggregate demand in an economy, stabilizing it in recessions. Thus, borrowing by the government becomes essential. Nonetheless, traditional economics adopts a different position, contending that public debt has a detrimental effect on the macro economy. Borrowing limits credit availability to the private sector and erodes budgetary discipline. Furthermore, this school of thought argues that by inhibiting foreign investment and replacing private sector investment, governmental debt repayment—especially foreign loans—can crowd out economic growth."

The persistent volatility of the world economy has made borrowing more common in emerging nations. To pay for their expenses, these countries are depending more and more on loans from local and international institutions. While traditional economic theory claims that by boosting aggregate demand, public debt can boost short-term economic growth, empirical data from a number of different nations tells a different tale. There is a long-term inverse relationship between economic growth and public debt. The crowding-out effect on investments made by the private sector and improper handling of borrowed funds are the main causes of this issue. In the end, this puts economic expansion at risk by raising long-term interest rate repayments. The relationship between debt and economic expansion presents several significant challenges. These challenges include high debt-to-revenue ratios due to revenue shortfalls, increasing ongoing expenses, reduced foreign resources, accumulation of external debt arrears, balance of payments imbalances, high unemployment and inflation rates, and exchange rate fluctuations. To sustain growth, policymakers

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must address these macroeconomic distortions. The impact of public debt on India's economic growth remains uncertain, particularly considering the government's heavy borrowing to cover spending deficits. This study aims to clarify this relationship by examining the effect of public debt on economic development in India from 1991 to 2022. Employing a unique regression approach, the study explores the complex dynamics between public debt and economic growth, offering a valuable contribution to existing literature.

1. Historical context and economic reforms 1991 Economic Reforms: Prior to 1991, India experienced a severe balance of payments crisis that resulted in high public debt and prompted the 1991 reforms. The early 1990s saw a significant shift in India's economic policy with the liberalization, privatization, and globalization (LPG) reforms, which aimed to open up the economy, reduce fiscal deficits, and control public debt.
2. Trends in Public Debt 1990s to early 2000s: Following the reforms, India saw moderate economic growth and relatively stable public debt levels. During this time, efforts to reduce deficits and control debt were carried out through fiscal consolidation. In the mid-2000s, however, economic growth accelerated due to strong performance in the industrial and service sectors, which resulted in increased tax revenues and improved debt metrics.
3. The Global financial crisis (2008–2009) The Global Financial Crisis caused a temporary increase in public debt as a result of stimulus measures to support the economy, although the impact was less severe than in many advanced economies. In the 2010s, public debt levels fluctuated, gradually increasing due to a variety of factors, including infrastructure spending, populist policies, and social welfare programs.
4. COVID-19 Pandemic (2020–2021) As a result of higher government expenditure on social assistance, healthcare, and economic stimulus programs, the pandemic significantly raised the nation's debt.

## 2. LITERATURE REVIEW

(Ojonje et al., 2024) in their research article “Impact of Public Debt on Economic Growth in Nigeria: 1981-2022” analyse the impact of Nigeria's public debt on the country's economic expansion throughout the given time frame. An Autoregressive Distributed Lag (ARDL) model is employed in the study to examine the correlation between economic growth and both external and domestic debt. The study recommends prudent management of public debt, recommending that borrowed funds be channelled into diversifying the economy's productive capacities in order to generate sufficient resources for debt repayment without adversely affecting the economy. The author finds that in the short run, domestic debt can have either a positive or negative effect on economic growth, depending on how the borrowed funds are utilized. In the long run, however, domestic debt positively affects economic growth, while external debt has a negative impact due to debt overhang.

(Selimaj et al., 2020) in their research article “The Impact of Public Debt in Economic Growth” discusses the impact of public debt on economic growth, focusing on Kosovo from 2009 to 2016. To test theories about the beneficial effects of public debt and other factors on economic growth, they built an econometric model. To support the hypotheses, the analysis makes use of factor analysis, regression, correlation, and descriptive statistics. They also look at the potential benefits and drawbacks of public debt on a nation's economic growth. It highlights that responsible public debt management and use for profitable projects can result in increased productivity, the creation of jobs, and general economic stability. It also reveals that when public debt is utilized responsibly, it can support economic growth. There is a positive association between GDP growth and other factors such as exports, wage increases, and remittances.

(Kondrat et al., 2019) in their research paper “The Impact of Public Debt on Economic Growth in Ukraine” They employed With GDP per capita serving as the economic growth indicator and the debt-to-GDP ratio serving as the public debt index, multiple regression models were used to analyze the data. The results show that there is no significant correlation between the public debt-to-GDP ratio and GDP per capita in Ukraine, indicating that low GDP growth may be the root cause of the rise in public debt. The impact of public debt on Ukraine's economic growth is discussed in this study along with an examination of the country's public debt, GDP ratio, and relationship with public debt and economic growth from 1992 to 2018.

(Mousa & Shawawreh, 2017) in their article “The Impact of Public Debt on the Economic Growth of Jordan: An Empirical Study (2000- 2015)” The impact of public debt on Jordan's economic growth between 2000 and 2015 is examined through the application of least squares analysis and regression models. They discover that total public debt, especially external debt, has a negative impact on economic growth, indicating that high debt levels may impede economic advancement. Moreover, they disclose that Jordan's dependence on public debt has grown as a result of the Arab Spring, rising oil prices, and the flood of Syrian refugees, creating economic difficulties.

(Fasoye & OLAYIWOLA, 2024) in their research article “Effect of Public Debt on Economic Growth in Nigeria with or without Domestic Investment” investigates the effect of Nigeria's public debt on the country's economic expansion from 1981 and 2020. They analyze the impact of public debt on economic growth using Dynamic Least Square (DOLS), taking into account the contribution of domestic investment. They find that public debt reduces investment levels, impeding economic growth and raising the possibility that high levels of debt could foster an unfavorable investment environment. Additionally, they support making

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large investments in industries that encourage growth and giving domestic investment priority over borrowing money from the government.

(Aiyedogbon et al., 2022) in their research article titled “Impact of public debt profile on economic growth: Evidence from Nigeria” examines the impact of Nigeria's public debt on economic growth in both the short and long terms. Using data from 1990 to 2020, they analyze the relationship between debt variables and economic growth using an autoregressive distributed lag (ARDL) model. They conclude that while external debt and debt servicing have a negative influence on growth, domestic debt has a positive impact on it over the long run.

(Shanini & Muço, 2022) in their article named “The Impact of Public Debt on Economic Growth in the Western Balkans” considers debt thresholds and the effectiveness of governance while examining the long-term effects of public debt on economic growth in the Western Balkans. They discover that while corruption has a detrimental effect on economic growth in the area, public debt has a beneficial effect. Reducing corruption and promoting good governance can result in more effective public spending and a smaller public debt to GDP ratio. These findings also show that the Western Balkan countries' ability to thrive economically is unaffected by debt levels above those set by the Maastricht Treaty.

(Abdelrahman, 2022) in his research paper “The Impact of Public Debt on Economic Growth in Palestine (2005-2019)” He looked at how public debt and domestic investment affected Palestine's economic growth between 2005 and 2019 and discovered a positive long-run link between the two, indicating a positive correlation between the two. In addition, he suggests limiting the expansion of public debt and increasing public investment to improve economic growth in Palestine. He said that the positive effect might be caused by the Palestinian public debt-to-GDP ratio not reaching a threshold that significantly lowers economic growth, or by the fact that the majority of the Palestinian public debt is domestic. It also urges more investigation into the effects of various forms of public debt on economic expansion.

### 3. THEORETICAL FRAMEWORK AND MODEL SPECIFICATION

This study uses the neo-classical endogenous growth model by Solow and Swan (1956) as a basis for an empirical investigation of the relationship between public debt and economic growth in India. This theoretical paradigm states that labor productivity, or output per worker, is the primary driver of growth. It's interesting to note that, in this context, technological developments are even more important than capital accumulation (Eke and Akujuobi, 2020).

The assumption of model is that Y (Output) is produced by employing labour, Physical Capital and technology. Consequently,

$$Y = f(A, K, L) \dots\dots\dots 1$$

Where, Y= Gross Domestic Product, A= Current stage of technology, K = Quantitative measure of physical capital, L = Quantity of labour input. All factors are relative to the production of output with their exponents in the equation which indicate their relative contributions and productivity that increases due to technological change.

Therefore, increased government expenditure on healthcare and education, among other vital sectors, represents important investments in human capital. The use of public debt to fund vital infrastructure projects, like health and education, lends relevance to the neoclassical growth model used in this study and helps drive India's economic progress. As a result, the following equation (1) is extended to include the impact of public debt on economic growth:

$$Y = f(\text{Public Debt}) \dots\dots\dots 2$$

The public debt in equation 2 can be further disaggregated into external debt and domestic debt.

$$Y = f(\text{EXTDBT}, \text{DOMDBT}) \dots\dots\dots 3$$

This disaggregation is justified by the required to give recognition to the effect of individual component of public debt- external (EXTDBT) debt and domestic (DOMDBT). This implies that the growth of the economy is determined by either or both external and domestic debt. Applying the Cobb-Douglas form of the production function yield

$$Y = A \cdot \text{DOMDBT}^\alpha \cdot \text{EXTDBT}^{(1-\alpha)} \dots\dots\dots 4$$

Where:  $\alpha$  and  $(1-\alpha)$  are shares of Domestic Debt (DOMDBT) and External Debt (EXTDBT) respectively and A is factor of productivity in the economy. The Implication of eq. 4 is the change taken in the GDP is cause by changes in either both external debt and domestic debt or its level of total factor productivity changes.

#### Model Specification

Based on above framework, the model for study can be specified as:

$$\text{GDP}_t = \beta_0 + \beta_1 \text{DOMDBT}_t + \beta_2 \text{EXTDBT}_t + \mu_t \dots\dots\dots .5$$

Taking the natural log of eq. 5

$$\ln \text{GDP}_t = \beta_0 + \beta_1 \ln \text{DOMDBT}_t + \beta_2 \ln \text{EXTDBT}_t + \mu_t \dots\dots\dots 6$$

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Where:  $\ln$  = natural logarithm of the function;  $GDP_t$  = Gross Domestic Product;  $DOMDBT_t$  = domestic debt;  $EXTDBT_t$  = external debt;  $\mu_t$  = error term (all measured at time  $t$ ) while  $\beta_0, \beta_1, \beta_2$ , are parameter estimates showing the relative share of the variables to real GDP.

The growth eq. in (6) represents a system of equations used to estimate the impact of public debt on economic growth. This estimation process, well-established in the literature on the public debt-growth nexus, aligns with classical regression analysis. Consequently, its relevance to this study is straightforward.

### 4. RESULTS

There has been much research on the connection between public debt and economic growth in the past few years, but opinions on how public debt affects economic growth are divided. This paper uses data on both domestic and external debts in India for the period 1991 to 2022 in order to contribute to the discussion on the relationship between public debt and economic growth by tracing the country's experience. Real GDP was used to reflect on economic growth during the study period. The tables below present the results:

#### REGRESSION

##### SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9701582
R Square	0.941206933
Adjusted R Square	0.937152238
Standard Error	0.15492337
Observations	32

##### ANOVA

	df	SS	MS	F	Significance F
Regression	2	11.14271108	5.571355539	232.1277176	1.42965E-18
Residual	29	0.69603627	0.024001251		
Total	31	11.83874735			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	3.152909897	0.866174841	3.640038648	0.001052845	1.381383437	4.924436356	1.381383437	4.924436356
$\ln DOMDBT$	0.056281144	0.024221485	2.323604223	0.027360346	0.006742646	0.105819643	0.006742646	0.105819643
$\ln EXTDDBT$	0.925967548	0.090220633	10.26336795	3.64731E-11	0.741445636	1.11048946	0.741445636	1.11048946

r regression. So long as public debt is managed responsibly, the nation's economy will expand. GDP is the dependent variable in this instance, explained similarly to the other independent variables. There is a strong correlation of 99.8% between all independent variables and the dependent variable.

The regression model explains a high proportion of the variability in the dependent variable, as indicated by the R Square value of 0.941. This means that approximately 94.1% of the variability in the dependent variable can be explained by the independent variables in the model. The significance F value (1.430E-18) indicates that the overall regression model is statistically significant, suggesting that the model provides a good fit for the data. The coefficients for domestic debt and external debt are both statistically significant. Domestic debt has a coefficient of 0.056 with a p-value of 0.027, indicating a positive and significant relationship with the dependent variable. External debt has a coefficient of 0.926 with a p-value of 0.0003, indicating a strong and highly significant positive relationship with the dependent variable.

Overall, the model indicates that  $\ln EXTDDBT$  has a particularly strong influence on the dependent variable, while  $\ln DOMDBT$  also plays a significant role. This output suggests that both  $\ln DOMDBT$  and  $\ln EXTDDBT$  are significant predictors of the dependent variable in this regression model.

### 5. POLICY IMPLICATION OF THE FINDING

Given the results of the regression analysis, the following policy implications can be derived:

#### **Emphasis on External Debt Management:**

The coefficient for  $\ln\text{EXTDBT}$  (external debt) is significantly high and highly significant ( $p\text{-value} \approx 0$ ). This indicates that external debt has a strong and positive relationship with the dependent variable, which could be GDP growth or economic development. Governments should focus on managing external debt efficiently. This could involve negotiating better terms for external loans, ensuring that borrowed funds are invested in high-return projects, and maintaining a sustainable level of external debt to avoid excessive burden on the economy.

#### **Attention to Domestic Debt:**

The coefficient for  $\ln\text{DOMDBT}$  (domestic debt) is also significant but smaller than that of external debt. It indicates that domestic debt has a positive impact on the dependent variable, though to a lesser extent. Policymakers should not overlook domestic debt. Strategies should be developed to enhance the efficiency of domestic debt markets, ensuring that domestic borrowing is used effectively to finance development projects. Additionally, maintaining a balance between domestic and external debt is crucial to mitigate risks associated with over-reliance on either form of debt.

#### **Fiscal Responsibility and Debt Sustainability:**

The high R Square value indicates that a substantial portion of the variability in the dependent variable is explained by the model, suggesting that debt levels (both domestic and external) are critical factors in economic outcomes. Governments should adopt fiscal policies that promote debt sustainability. This includes setting clear fiscal rules and targets for debt levels, improving transparency and accountability in public financial management, and implementing measures to enhance revenue generation and expenditure efficiency.

#### **Investment in Productive Sectors:**

The positive relationship between both forms of debt and the dependent variable suggests that borrowing can lead to positive economic outcomes when invested wisely. Borrowed funds should be channelled into productive sectors that yield high economic returns, such as infrastructure, education, and healthcare. Investments in these areas can drive long-term economic growth and development.

#### **Strengthening Institutional Frameworks:**

To ensure effective management of both domestic and external debt, strong institutional frameworks are necessary. Strengthen institutions responsible for debt management by enhancing their capacity for debt analysis, monitoring, and reporting. Additionally, fostering a stable macroeconomic environment is crucial for maintaining investor confidence and ensuring favorable borrowing terms.

By implementing these policy recommendations, governments can optimize the benefits of borrowing while mitigating associated risks, ultimately fostering sustainable economic growth and development.

### 6. CONCLUSION

The coefficients for domestic debt and external debt are both significant, with external debt exhibiting a particularly strong relationship with the dependent variable. An attempt has been made in this study to give an accurate picture of the complex relationship between public debt and economic growth in India for the period 1991 to 2022. The empirical results show that both external debt and domestic debt exert positive impact on economic growth. The regression model explains a high proportion of the variability in the dependent variable. The significance F value indicates that the overall model is statistically significant. Based on these results, it is recommended that public debts be managed carefully. In particular, the borrowed funds should be used to diversify the economy's productive capacities in order to produce enough resources to pay off or service the debts without having a detrimental impact on the economy. To ensure sustainable growth and development, excessive borrowing from foreign creditors should be discouraged in this way. India's public debt and economic growth from 1991 to 2022 have a complicated relationship. Long-term economic stability and growth depend on maintaining sustainable debt levels, even though public debt has been a vital instrument for boosting growth during recessions. To make sure that public debt does not become a barrier to future economic growth, policymakers must strike a balance between the need for fiscal stimulus and responsible debt management.

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