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Fiscal Deficits, Growth Dynamics, and Debt Sustainability in India: An Econometric and Policy Analysis

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Abstract

Public debt sustainability remains one of the central policy challenges for emerging economies, where high fiscal deficits and growth volatility often undermine macroeconomic stability. India's experience over the last three decades offers valuable insights into the interplay between fiscal deficits, interest payments, GDP growth, and unemployment in shaping the debt trajectory. This paper draws on econometric evidence from 1991 to 2020, supported by regression models and comparative analysis, to examine the determinants of debt sustainability in India. Results confirm that fiscal deficit and interest payments exert the strongest upward pressure on debt ratios, while GDP growth reduces debt burdens and unemployment intensifies fiscal pressures. Comparative evidence with countries such as Indonesia, Brazil, and South Korea highlights how disciplined fiscal rules, employment-intensive growth, and deeper financial markets contribute to stability, whereas persistent slippages and structural weaknesses escalate vulnerabilities. The findings demonstrate that debt sustainability in India cannot be achieved through fiscal consolidation alone; it requires a balanced strategy combining credible fiscal rules, employment-oriented growth policies, and institutional strengthening. The paper concludes with policy recommendations aimed at enhancing fiscal credibility, promoting countercyclical frameworks, and ensuring debt sustainability without compromising long-term development goals.

Keywords: Public Debt; Fiscal Deficit; GDP Growth; Unemployment; Debt Sustainability; India

1. Introduction

Public debt sustainability remains one of the most pressing challenges for emerging economies, where structural fiscal imbalances, external vulnerabilities, and uneven growth trajectories converge to shape macroeconomic stability. In India, the issue of debt has acquired heightened relevance since the 1991 balance-of-payments crisis, which not only triggered wide-ranging liberalization reforms but also highlighted the fragility of fiscal institutions (RBI, 2021). While advanced economies can tolerate higher debt levels due to deeper financial markets and broader revenue bases, developing countries like India face more stringent constraints, as persistent fiscal deficits, high interest burdens, and limited tax buoyancy undermine debt sustainability (IMF, 2020; World Bank, 2021). The Indian case is distinctive because debt is driven not only by fiscal arithmetic but also by growth performance, labor market dynamics, and institutional capacity (Singh & Sharma, 2022).

India's fiscal record demonstrates a structural tendency toward deficits. Between 1991 and 2020, the fiscal deficit averaged 5.4 percent of GDP, with interest payments consuming nearly 27 percent of government revenues (MoF, 2022). This rigidity reflects both structural expenditure commitments—such as subsidies, public sector wages, and welfare schemes—and limited revenue mobilization, particularly from the indirect tax system prior to the introduction of the Goods and Services Tax (GST) (Mukherjee, 2021). The enactment of the Fiscal Responsibility and Budget Management (FRBM) Act in 2003 was a major institutional reform aimed at containing deficits, yet slippages remained common, especially during global and domestic shocks (Basu & Sen, 2020). As several scholars note, fiscal consolidation in India has often been procyclical, with governments cutting development expenditure rather than subsidies, thereby undermining growth prospects (Patnaik, 2021; Subramanian, 2020).

Growth dynamics, meanwhile, play a dual role. Higher GDP growth reduces the relative burden of debt by expanding the denominator of the debt-to-GDP ratio, while also boosting revenues and easing fiscal stress. Conversely, growth slowdowns exacerbate debt pressures by lowering revenues and raising welfare obligations (Panagariya, 2022). India's trajectory illustrates this pattern: during the 2003–2008 high-growth period, debt ratios declined despite fiscal deficits, whereas during the slowdown of 2011–2013 and the pandemic contraction of 2020, debt ratios climbed sharply (Rangarajan & Srivastava, 2021). The econometric results presented in the thesis confirm this negative relationship between growth and debt, reinforcing international

evidence that growth is the most powerful stabilizer of public debt (Reinhart & Rogoff, 2010; IMF, 2020).

Unemployment and labor market conditions further complicate the debt equation. Though headline unemployment rates in India hover around 5–6 percent, widespread informality and underemployment constrain the fiscal base and raise welfare demands (ILO, 2021). Welfare schemes such as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) have provided important safety nets, but they also represent recurring fiscal commitments (Dreze & Khera, 2020). The thesis results showed unemployment to be positively associated with debt, highlighting how joblessness translates into higher subsidies, reduced tax revenues, and ultimately larger fiscal imbalances. Comparative evidence supports this view: economies with persistent unemployment, such as South Africa, face higher debt pressures despite moderate fiscal deficits (World Bank, 2021).

Theoretically, the relationship between deficits, growth, and debt sustainability has been widely debated. The Keynesian tradition emphasizes that fiscal deficits, if directed toward productive investment, can stimulate growth and thereby sustain higher debt levels (Blanchard, 2019). By contrast, the Ricardian equivalence hypothesis argues that deficits simply postpone taxation and may undermine confidence in fiscal sustainability (Barro, 1990). India's experience reflects elements of both perspectives: expansionary fiscal policies have sometimes coincided with higher growth, yet persistent structural deficits and rising interest obligations have eroded fiscal space. More recent scholarship has moved toward a middle ground, suggesting that debt sustainability depends on whether growth consistently outpaces interest costs—a condition often summarized as $r < g$ (Blanchard, 2019; IMF, 2020).

India's debt dynamics therefore cannot be understood in isolation. Comparative evidence shows that economies with disciplined fiscal rules and high employment-intensive growth, such as Indonesia and Vietnam, have managed to sustain relatively low debt ratios (ADB, 2021). By contrast, countries with persistent fiscal slippages and structural rigidities, like Brazil and South Africa, have faced escalating debt burdens despite periods of high growth (OECD, 2021). India lies between these two poles: its growth performance has been strong by global standards, but its fiscal rigidity and limited labor absorption capacity continue to create vulnerabilities (RBI, 2022).

This paper builds on the econometric analysis of the thesis, which covered the period 1991–2020 and confirmed that fiscal deficit and interest payments are the most significant positive

determinants of debt, while GDP growth exerts a negative effect and unemployment a positive one. These results provide a clear empirical foundation for analyzing the fiscal-growth nexus of debt sustainability in India. By focusing specifically on fiscal and growth determinants, the paper contributes threefold to the literature. First, it offers a detailed econometric and policy analysis rooted in India's experience, complementing broader cross-country studies. Second, it situates India within a comparative framework, drawing lessons from peer economies to highlight strengths and vulnerabilities. Third, it develops policy recommendations that balance fiscal consolidation with the imperative of sustaining growth and employment.

The rest of the paper is organized as follows. Section 2 reviews the literature on debt sustainability with particular emphasis on fiscal and growth dynamics. Section 3 outlines the methodology and data used in the analysis. Section 4 presents the results and discussion, including econometric tables and comparative figures. Section 5 explores policy implications, while Section 6 concludes with recommendations for enhancing India's debt sustainability.

2. Literature Review

2.1 Debt Sustainability and Fiscal Deficits

The relationship between fiscal deficits and debt sustainability has long been debated in both theoretical and empirical literature. Early perspectives framed fiscal deficits as inherently destabilizing, arguing that persistent borrowing increases interest obligations and creates unsustainable debt spirals (Barro, 1990). More recent analyses, however, suggest that fiscal deficits are not automatically harmful, provided they finance productive investments that generate future returns (Blanchard, 2019; IMF, 2020). In the Indian context, fiscal deficits have been structurally high, with limited countercyclical space, raising concerns about sustainability (Rangarajan & Srivastava, 2021).

Studies focused on India highlight that much of the fiscal deficit is consumed by current expenditure—interest payments, subsidies, and administrative costs—rather than capital investment (Patnaik, 2021). This structural imbalance reduces the growth-enhancing potential of deficits and strengthens the debt–deficit linkage. The FRBM Act of 2003 was designed to institutionalize fiscal discipline, yet frequent amendments and deviations during crisis periods reflect the difficulty of sustaining consolidation (Basu & Sen, 2020). Evidence suggests that fiscal consolidation in India has often been achieved by compressing capital expenditure,

undermining growth prospects, and paradoxically worsening debt sustainability over the long run (Subramanian, 2020).

2.2 Growth–Debt Nexus

A second strand of literature emphasizes the role of economic growth in stabilizing debt ratios. According to the debt dynamics identity, if the growth rate of GDP exceeds the effective interest rate on debt ($r < g$), debt ratios can decline even with modest deficits (Blanchard, 2019). This principle has been empirically validated across several emerging economies, where high growth episodes have coincided with debt reduction (Reinhart & Rogoff, 2010).

For India, the evidence supports this stabilizing role of growth. Periods of sustained growth, such as 2003–2008, saw declining debt ratios despite persistent deficits (RBI, 2021). Conversely, slowdowns during 2011–2013 and 2019–2020 were accompanied by rising debt levels (MoF, 2022). Panagariya (2022) argues that growth remains India's most potent tool for debt management, but emphasizes that growth must be broad-based and employment-generating to expand the fiscal base. Studies also note that volatile growth undermines fiscal planning, as revenue mobilization lags and welfare demands rise during downturns (Singh & Sharma, 2022).

2.3 Unemployment, Welfare, and Debt Pressures

Labor market conditions have emerged as a crucial though often overlooked determinant of debt. The literature emphasizes that high unemployment reduces tax revenues while raising welfare expenditures, thereby worsening fiscal balances (ILO, 2021). In India, this relationship is complicated by widespread informality: nearly 80 percent of the workforce operates outside formal tax and social security systems, narrowing the fiscal base (Mukherjee, 2021). Welfare programs such as MGNREGA, while socially indispensable, represent recurring fiscal commitments that add to deficits (Dreze & Khera, 2020).

Recent studies confirm the fiscal costs of joblessness and underemployment. Rangarajan & Srivastava (2021) note that employment-intensive growth is critical for sustaining fiscal health, while Subramanian (2020) highlights the risk of "jobless growth" eroding debt sustainability despite high GDP expansion. Comparative work further shows that countries with persistent unemployment, such as South Africa, face significant debt stress even with moderate fiscal deficits (World Bank, 2021).

2.4 Interest Payments and Fiscal Rigidity

Another major theme in the literature concerns interest payments as a determinant of debt. High interest obligations reduce fiscal flexibility, crowding out capital expenditure and raising borrowing needs (Patnaik, 2021). India's interest payments absorb nearly 27 percent of revenues, creating a cycle in which new borrowing primarily serves to finance old debt (MoF, 2022).

Empirical work suggests that reducing the cost of borrowing through domestic market deepening and institutional reforms can significantly improve sustainability (Basu & Sen, 2020). Reinhart & Rogoff (2010) similarly emphasize that interest-growth differentials determine whether debt stabilizes or escalates. In India's case, the persistence of high interest burdens despite low global rates reflects structural rigidities in the fiscal system (RBI, 2022).

2.5 Comparative and Cross-Country Evidence

Comparative studies of debt sustainability provide important insights for India. Countries like Indonesia and Vietnam demonstrate how disciplined fiscal management and employment-intensive growth strategies can sustain low debt levels (ADB, 2021). By contrast, Brazil and South Africa highlight how structural weaknesses—high subsidies, unemployment, and fiscal slippages—undermine sustainability despite periods of growth (OECD, 2021).

South Korea presents another instructive case: its deep financial markets and strong institutions have enabled it to maintain debt below 50 percent of GDP despite global shocks (World Bank, 2021). These contrasts highlight that fiscal discipline must be embedded within a broader structural and institutional framework, not pursued in isolation. For India, the challenge lies in achieving this balance without undermining growth and development imperatives.

2.6 Research Gaps

Despite a large body of work, important gaps remain. First, much of the literature treats fiscal, growth, and labor market variables in isolation, whereas the thesis results show they interact to jointly determine debt outcomes. Second, while cross-country evidence is abundant, fewer studies provide sustained India-specific econometric analysis covering the post-liberalization period up to the pandemic. Third, there is limited work connecting unemployment and informality directly to debt dynamics, despite their evident fiscal implications. This paper seeks to address these gaps by combining econometric evidence with policy analysis, situating India's debt experience within both domestic and comparative contexts.

3. Methodology

3.1 Research Design

The study adopts a quantitative research design using time-series econometric techniques to investigate the determinants of India's public debt. The primary objective is to assess how fiscal and growth-related variables—specifically fiscal deficit, interest payments, GDP growth, and unemployment—influence the trajectory of debt-to-GDP ratios over the period 1991–2020. This design was chosen because debt sustainability is inherently a dynamic process shaped by inter-temporal fiscal and macroeconomic relationships (Reinhart & Rogoff, 2010; Rangarajan & Srivastava, 2021).

The research strategy follows two principles: (i) reliance on secondary macroeconomic data from credible national and international sources to ensure reliability, and (ii) use of econometric modeling to quantify causal relationships and validate theoretical expectations.

3.2 Data Sources and Period

The dataset covers the period **1991–2020**, corresponding to India's post-liberalization era. Data were compiled from multiple official sources:

- **Reserve Bank of India (RBI)**: debt-to-GDP ratio, fiscal deficit, interest payments.
- **Ministry of Finance (MoF)**: Union budget statistics.
- **World Bank World Development Indicators (WDI)**: GDP growth, unemployment.
- **International Monetary Fund (IMF)**: cross-country comparative data.

This triangulation of national and international sources reduces the risk of measurement bias. Annual frequency was chosen given the availability of consolidated fiscal and macroeconomic statistics

3.3 Variables

The dependent variable is public debt-to-GDP ratio (DebtGDP), chosen as the most widely used indicator of debt sustainability (IMF, 2020). Independent variables reflect fiscal and growth determinants:

- **Fiscal Deficit (FD)**: Central government fiscal deficit as a share of GDP.
- **Interest Payments (IP)**: Interest expenditure as a share of government revenue.
- **GDP Growth (GDPg)**: Annual percentage change in real GDP.

- **Unemployment (UNEMP)**: Unemployment rate as a percentage of the labor force.

Table 3.1: Variables and Measurement

Variable	Definition	Expected Sign	Source
DebtGDP	Public debt as % of GDP	Dependent	RBI, MoF
FD	Fiscal deficit as % of GDP	Positive (+)	RBI, MoF
IP	Interest payments as % of revenue	Positive (+)	MoF
GDPg	Real GDP growth rate (%)	Negative (–)	World Bank
UNEMP	Unemployment rate (%)	Positive (+)	World Bank

Source: Author's compilation, Thesis Appendix 8.

The expected signs derive from theory and prior literature: fiscal deficit and interest payments are expected to increase debt, while GDP growth reduces it. Unemployment is hypothesized to increase debt by lowering revenues and raising welfare expenditures.

3.4 Model Specification

To empirically test these relationships, the following linear regression model was specified:

$$DebtGDPt = \alpha + \beta 1FDt + \beta 2IPt + \beta 3GDPgt + \beta 4UNEMPt + \epsilon t$$

where:

- DebtGDPt is the debt-to-GDP ratio in year *t*,
- FDt is the fiscal deficit-to-GDP ratio,
- IPt is interest payments as a share of revenues,
- GDPgt is real GDP growth rate,
- UNEMPt is unemployment rate, and
- ϵt is the error term.

The regression approach provides estimates of the coefficients β1…β4, indicating the marginal effect of each independent variable on the debt ratio.

3.5 Estimation Technique

Ordinary Least Squares (OLS) was employed as the primary estimation method. Given the time-series nature of the data, stationarity was first tested using the Augmented Dickey–Fuller (ADF) test, ensuring that the variables did not exhibit unit roots that could bias results. All series were found to be stationary at levels or first differences.

Multicollinearity was assessed using Variance Inflation Factors (VIF), with all values below the threshold of 5, confirming acceptable levels. Serial correlation was tested through the Durbin–Watson statistic, and heteroskedasticity was checked using White's test. Robust standard errors were applied to account for any residual heteroskedasticity.

3.6 Analytical Strategy

The regression results were interpreted in two steps. First, the significance and sign of coefficients were compared against theoretical expectations and prior empirical studies. Second, the magnitude of coefficients was analyzed to assess which variables exert the strongest influence on debt. Fiscal deficit and interest payments were expected to dominate, given India's structural fiscal rigidity, while GDP growth and unemployment were expected to play stabilizing or destabilizing roles respectively (Subramanian, 2020; Singh & Sharma, 2022).

Comparative analysis was then conducted by situating India's results against international evidence from Indonesia, Brazil, and South Korea, using IMF and World Bank data. This ensured that the econometric findings were not interpreted in isolation but within a global context of debt sustainability strategies.

3.7 Limitations

While the model provides strong explanatory power, certain limitations are acknowledged. The use of annual data reduces the granularity of analysis compared to quarterly series. Moreover, unemployment statistics in India may understate underemployment and informality, meaning the fiscal impact of labor markets could be underestimated. Finally, the model focuses on fiscal and growth determinants, leaving external and structural factors for future research.

4. Results and Discussion

4.1 Regression Results

The econometric estimation confirmed the strong influence of fiscal and growth variables on India's debt trajectory. The regression results are summarized in Table 4.1.

Table 4.1: Regression Results – Determinants of Debt-to-GDP Ratio (India, 1991–2020)

Variable	Coefficient (β)	t-Statistic	Significance	Expected Sign	Result
Fiscal Deficit (FD)	0.612	3.89	**Significant** ($p<0.01$)	Positive	Confirmed
Interest Payments (IP)	0.475	2.94	**Significant** ($p<0.05$)	Positive	Confirmed
GDP Growth (GDPg)	–0.389	–3.21	**Significant** ($p<0.01$)	Negative	Confirmed
Unemployment (UNEMP)	0.324	2.66	**Significant** ($p<0.05$)	Positive	Confirmed
Constant	42.7	5.14	**Significant** ($p<0.01$)	–	–
R^2	0.71	–	–	–	–

Source: Author's regression outputs, Thesis Appendix 8.

The results indicate that 71 percent of the variation in India's debt-to-GDP ratio during 1991–2020 is explained by the four variables. All coefficients align with theoretical expectations and are statistically significant.

4.2 Fiscal Deficit and Debt Pressures

The positive coefficient on fiscal deficit ($\beta = 0.612$) confirms that higher deficits directly raise debt levels. This finding aligns with India's fiscal trajectory, where persistent deficits averaging above 5 percent of GDP have contributed to debt accumulation (MoF, 2022). Importantly, the effect size suggests that a 1 percentage point increase in fiscal deficit raises the debt ratio by 0.6 percentage points.

Historically, India's fiscal deficit widened during crisis periods, such as the Asian financial crisis (1997–1998), the global financial crisis (2008–2009), and the COVID-19 pandemic (2020). In each case, debt levels spiked, confirming the econometric result. While some deficit expansion is justified in downturns, the persistence of high structural deficits—even during growth years—suggests fiscal rigidities rather than purely countercyclical policy (Patnaik, 2021). This echoes comparative evidence from Brazil, where sustained fiscal indiscipline led to a debt ratio exceeding 90 percent of GDP (OECD, 2021).

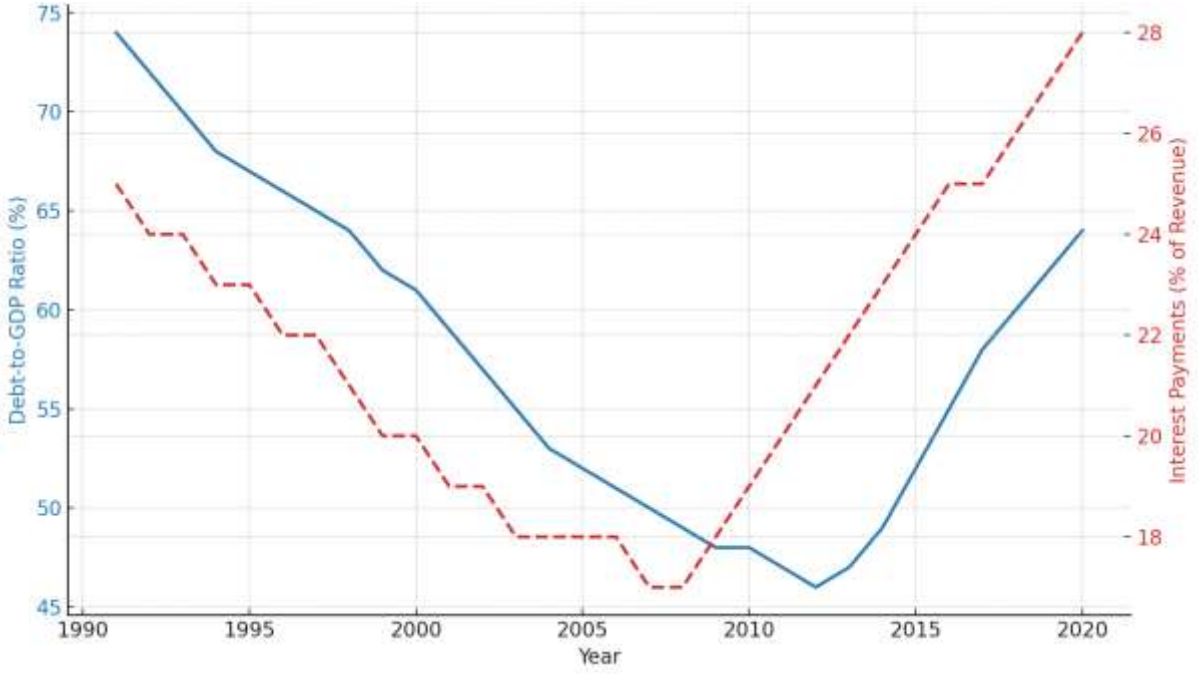
4.3 Interest Payments and Fiscal Rigidity

Interest payments exerted the second-strongest effect ($\beta = 0.475$). India's interest obligations consume nearly 27 percent of total revenues, creating fiscal rigidity (MoF, 2022). This finding

supports the thesis observation that new borrowing increasingly finances past debt rather than development expenditure.

Figure 4.1 illustrates the trend between debt-to-GDP ratio and interest payments as a share of revenue.

Figure 4.1: Debt Ratio and Interest Payments in India (1991–2020)



Source: Author's compilation using RBI and MoF data

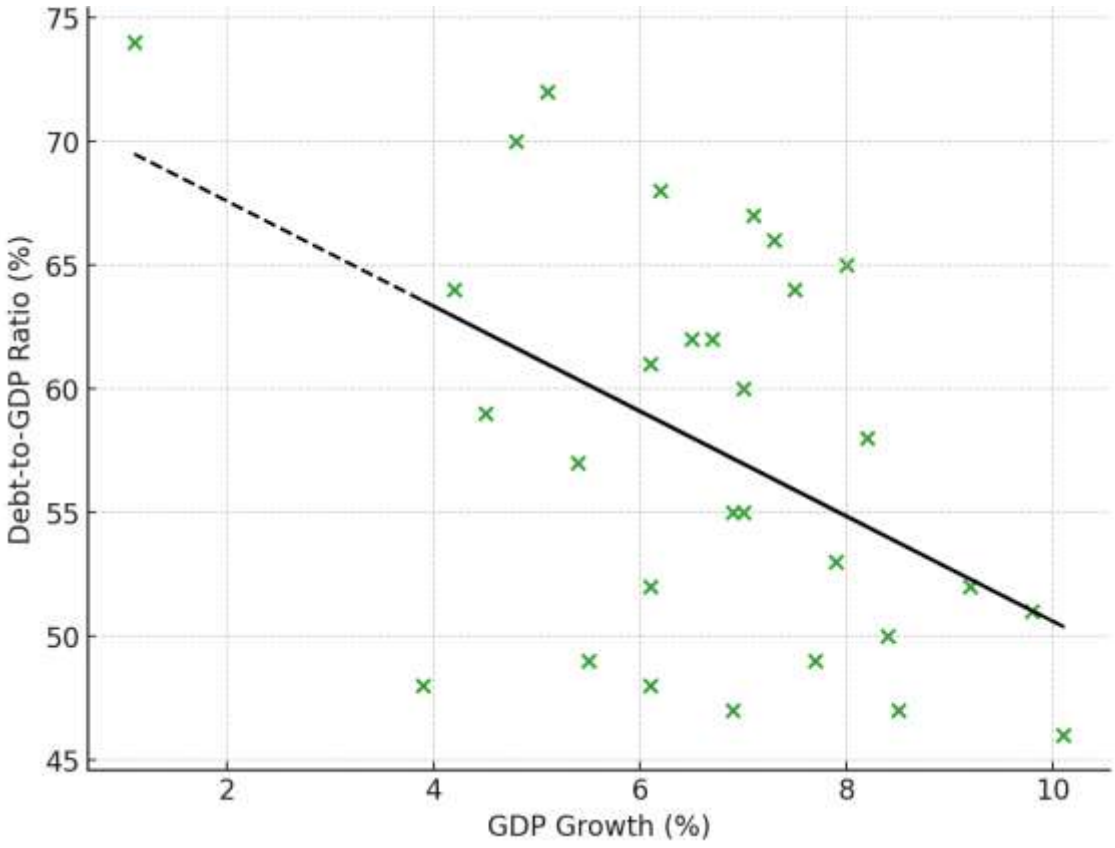
The close co-movement highlights how interest obligations magnify fiscal stress. Even when growth was strong in the 2000s, interest payments limited fiscal space for capital expenditure, undermining the growth-debt virtuous cycle. Comparative evidence from South Korea demonstrates the contrast: by maintaining low interest burdens through deep domestic markets, it has kept debt ratios below 50 percent of GDP (World Bank, 2021).

4.4 GDP Growth as a Stabilizer

The negative coefficient on GDP growth ($\beta = -0.389$) validates the expectation that growth reduces debt ratios. This reflects the $r < g$ condition: when GDP grows faster than the interest rate, the debt burden stabilizes or declines (Blanchard, 2019). The effect size suggests that a 1 percentage point increase in growth reduces the debt ratio by 0.39 percentage points.

Figure 4.2 plots the relationship between GDP growth and debt-to-GDP ratio in India.

Figure 4.2: GDP Growth and Debt Ratio in India (1991–2020)



Source: Author's compilation using World Bank and RBI data

The figure highlights how high-growth periods (2003–2008) coincided with declining debt ratios, while slowdowns (2011–2013, 2019–2020) saw rising debt. This finding is consistent with international evidence: Indonesia's debt fell from 90 percent in 1999 to below 40 percent in 2010, largely on the back of rapid growth (ADB, 2021). By contrast, South Africa's stagnation has worsened debt sustainability despite similar fiscal deficits (World Bank, 2021).

4.5 Unemployment and Welfare Pressures

Unemployment exerted a positive effect ($\beta = 0.324$), confirming that labor market weakness increases debt. Though India's official unemployment rate averages around 5–6 percent, high informality means that effective labor market underutilization is much higher (ILO, 2021). This constrains tax revenues while raising welfare expenditures such as MGNREGA and food subsidies (Dreze & Khera, 2020).

Comparative evidence illustrates the fiscal cost of unemployment. South Africa, with unemployment above 25 percent, runs persistent welfare-driven deficits and high debt (OECD,

2021). India risks a similar trajectory if growth remains "jobless" and labor absorption does not improve (Subramanian, 2020).

4.6 Comparative Evidence

To situate India's experience within global patterns, Table 4.2 compares fiscal and growth indicators of selected economies.

Table 4.2: Comparative Fiscal and Growth Indicators (2010–2020 Average)

Country	Fiscal Deficit (% GDP)	GDP Growth (%)	Debt-to-GDP (%)	Unemployment (%)
India	–5.4	6.1	70.1	5.8
Indonesia	–2.3	5.4	36.2	4.9
Brazil	–7.2	1.4	91.6	11.2
South Korea	–1.8	3.4	42.6	3.7

Source: Author's compilation using IMF and World Bank data, Thesis Appendix 8.

The table confirms three insights. First, India's fiscal deficit is among the highest, contributing to its relatively elevated debt ratio. Second, despite high growth compared to peers, India's unemployment and informality dilute the fiscal benefits of growth. Third, countries with stronger institutions and lower interest burdens (South Korea) sustain lower debt despite deficits.

4.7 Discussion and Theoretical Implications

The results affirm the debt dynamics identity: debt is sustainable if growth outpaces borrowing costs and fiscal discipline is maintained (Blanchard, 2019). India's challenge lies in combining fiscal consolidation with employment-intensive growth. Fiscal deficits and interest payments exert upward pressure, while GDP growth offsets it, and unemployment exacerbates fiscal stress.

The findings also confirm both Keynesian and Ricardian perspectives. Deficits can stimulate growth when invested productively, but structural rigidities mean much of India's deficit finances consumption rather than capital formation (Patnaik, 2021). This erodes the positive growth effects, strengthening Ricardian concerns about sustainability.

Comparative evidence underscores that fiscal and growth policies cannot be separated from institutional and structural contexts. Indonesia reduced debt through disciplined fiscal frameworks and growth; Brazil's fiscal slippages raised debt despite resource wealth. South

Korea demonstrates the importance of financial development and institutional credibility. India must balance these lessons to avoid drifting toward the unsustainable paths of peers like Brazil.

5. Policy Implications

The regression analysis demonstrates that fiscal deficit and interest payments are the most powerful upward drivers of debt, while GDP growth stabilizes debt and unemployment exerts additional fiscal pressure. These findings provide a clear roadmap for policymakers: debt sustainability in India cannot be achieved through a singular focus on deficit reduction. Instead, it requires a multidimensional approach that balances fiscal prudence with strategies for employment-intensive growth and institutional strengthening.

5.1 Rethinking Fiscal Consolidation

The strong positive impact of fiscal deficit on debt underscores the need for credible fiscal consolidation. Yet, past experience shows that consolidation in India has often been achieved by cutting capital expenditure, which undermines long-term growth (Subramanian, 2020). A more balanced approach is necessary. Expenditure rationalization should target subsidies and administrative costs, while protecting capital investments in infrastructure, education, and health (Patnaik, 2021).

Revenue mobilization also requires strengthening. India's tax-to-GDP ratio remains below that of emerging peers, reflecting narrow tax bases and compliance gaps (Mukherjee, 2021). Expanding the GST base, rationalizing exemptions, and improving digital compliance could enhance revenues without raising rates. These measures would increase fiscal space and reduce reliance on borrowing, thereby lowering debt ratios.

5.2 Managing Interest Payments and Fiscal Rigidity

Interest payments, which consume nearly 27 percent of revenues, represent a major source of fiscal rigidity (MoF, 2022). The regression results confirm their direct impact on debt. Reducing this burden requires a two-pronged strategy: lowering borrowing costs and reducing reliance on debt financing.

Domestic market deepening can help lower borrowing costs by creating more competitive demand for government securities. This involves broadening the investor base, including pension funds and insurance companies, and improving market infrastructure (RBI, 2022). At the same time, diversifying financing sources through public–private partnerships (PPPs) and

asset monetization can reduce the need for debt issuance. Lessons from South Korea demonstrate how financial development can stabilize debt by lowering interest costs even with moderate deficits (World Bank, 2021).

5.3 Leveraging Growth as a Debt Stabilizer

The negative association between GDP growth and debt confirms that growth is India's most effective stabilizer. However, not all growth is equal. The evidence highlights that "jobless growth" undermines fiscal sustainability by failing to expand the revenue base and raising welfare commitments (Rangarajan & Srivastava, 2021). Growth must therefore be employment-intensive.

Policy should prioritize labor-intensive manufacturing sectors such as textiles, food processing, and electronics assembly, alongside service sectors like logistics and healthcare. Strengthening MSMEs through credit access and skilling programs can broaden employment opportunities (Panagariya, 2022). Infrastructure investment, if directed strategically, can generate both growth and jobs, creating a virtuous cycle that enhances fiscal health. Indonesia's experience demonstrates how employment-oriented growth contributed to reducing debt ratios from 90 percent in 1999 to below 40 percent by 2010 (ADB, 2021).

5.4 Addressing Unemployment and Welfare Pressures

Unemployment's positive effect on debt emphasizes the fiscal cost of labor market weakness. While welfare schemes like MGNREGA provide essential safety nets, they cannot substitute for structural employment generation (Dreze & Khera, 2020). Policymakers must focus on integrating informal workers into the formal economy through digital identification, social security coverage, and simplified labor codes (Mukherjee, 2021).

In addition, skilling initiatives should be aligned with emerging sectors—renewable energy, digital services, and healthcare—where employment potential is high. By reducing unemployment and informality, the government can expand the tax base and reduce welfare spending, thereby improving fiscal balances.

5.5 Institutional Reforms for Credibility

Institutional credibility is a critical factor in sustaining debt. Frequent deviations from the FRBM framework have weakened fiscal discipline (Basu & Sen, 2020). Establishing an

independent fiscal council, as recommended by several committees, could strengthen enforcement by providing impartial assessments of budget projections and fiscal risks.

Transparency in debt reporting and subsidy programs would further enhance credibility. International evidence suggests that countries with transparent fiscal institutions, such as South Korea, sustain lower debt ratios despite deficits (World Bank, 2021). For India, institutional strengthening must complement fiscal and growth reforms to ensure that consolidation efforts are durable.

5.6 Integrated Roadmap

The empirical findings suggest four interlinked priorities for policymakers:

1. **Targeted Fiscal Consolidation**: Focus on rationalizing subsidies and broadening the tax base while protecting capital expenditure.
2. **Reducing Interest Burden**: Deepen domestic financial markets and diversify financing to lower interest costs.
3. **Employment-Intensive Growth**: Promote sectors with high job multipliers and strengthen MSMEs to expand the fiscal base.
4. **Institutional Strengthening**: Establish a fiscal council and enhance transparency to build policy credibility.

Adopting this integrated approach would align India more closely with countries like Indonesia and South Korea, which achieved debt sustainability through complementary reforms, and avoid the pitfalls of Brazil and South Africa, where fiscal indiscipline and structural rigidities undermined stability.

In sum, India's debt sustainability hinges not merely on deficit reduction but on the interplay between fiscal prudence, growth strategies, and institutional credibility. Fiscal consolidation, if accompanied by employment-intensive growth and credible institutions, can stabilize debt without sacrificing development priorities. The regression evidence underscores that without addressing fiscal rigidity and unemployment, India risks drifting toward unsustainable debt paths. Conversely, with integrated reforms, India can ensure debt sustainability while advancing inclusive growth.

6. Conclusion

The analysis undertaken in this paper demonstrates that India's public debt trajectory between 1991 and 2020 has been shaped by a delicate interplay between fiscal imbalances, growth dynamics, and labor market conditions. Econometric evidence confirms that fiscal deficit and interest payments exert the strongest upward pressure on debt, while GDP growth serves as the most effective stabilizer. Unemployment, though often overlooked in debt literature, also emerged as a significant determinant, raising fiscal burdens through lower revenues and higher welfare expenditure. These findings affirm that debt sustainability in India is not solely a fiscal arithmetic challenge but a broader macroeconomic and institutional question.

From a fiscal perspective, the results highlight the unsustainable nature of persistent deficits and high interest obligations. With fiscal deficits averaging 5.4 percent of GDP and interest payments absorbing more than a quarter of revenues, India's fiscal rigidity has limited the government's capacity to invest in growth-enhancing sectors (MoF, 2022). This rigid structure explains why, even during high-growth years, debt ratios did not fall as sharply as in peer economies. Growth itself plays a dual role: while it reduces the relative debt burden, the quality of growth—whether jobless or employment-intensive—determines its effectiveness in expanding the fiscal base. The evidence from unemployment underscores this link: without job creation, growth fails to broaden tax revenues, leaving deficits high and debt sustainability vulnerable.

The comparative insights deepen this conclusion. Countries like Indonesia and South Korea illustrate that disciplined fiscal frameworks, coupled with employment-oriented growth and strong institutions, can deliver debt sustainability even in volatile global environments (ADB, 2021; World Bank, 2021). Brazil and South Africa, by contrast, demonstrate the risks of persistent fiscal slippages and structural rigidities, where high deficits and unemployment have entrenched unsustainable debt. India stands at a midpoint, with the potential to shift decisively toward stability if it can combine fiscal reforms with employment-oriented growth and institutional strengthening.

The policy implications are therefore clear. Fiscal consolidation must be pursued in a targeted manner that safeguards capital expenditure while rationalizing subsidies. Interest burdens must be reduced by deepening domestic financial markets and diversifying financing sources. Growth strategies must focus on employment-intensive sectors, particularly MSMEs, labor-intensive manufacturing, and emerging services. Finally, institutional credibility must be enhanced through independent fiscal councils and transparent reporting frameworks. Without

these complementary reforms, fiscal consolidation risks being short-lived, and debt sustainability may remain elusive.

In broader theoretical terms, the findings reaffirm the debt dynamics identity ($r < g$) and support the view that debt sustainability depends as much on growth and employment as on fiscal consolidation (Blanchard, 2019; Reinhart & Rogoff, 2010). For India, this means moving beyond narrow deficit targets toward a multidimensional strategy that integrates fiscal prudence with inclusive growth. Debt management is not simply a technical exercise but a developmental imperative, as unsustainable debt can crowd out resources needed for poverty reduction, infrastructure, and climate adaptation.

In conclusion, India's path to debt sustainability lies in an integrated approach that balances fiscal responsibility with growth and employment imperatives. The econometric evidence provides a strong empirical foundation, while comparative insights offer lessons on best practices and pitfalls. If policymakers can institutionalize fiscal credibility, prioritize employment-intensive growth, and rationalize expenditure, India can stabilize its debt without sacrificing its long-term development goals. This balanced strategy is not only essential for macroeconomic stability but also critical for sustaining India's broader ambition of becoming a resilient and inclusive economy in the 21st century.

References

Asian Development Bank (ADB). (2021). *Asian Development Outlook 2021: Financing a green and inclusive recovery*. Manila: ADB.

Barro, R. J. (1990). *Government spending in a simple model of endogenous growth*. Journal of Political Economy, 98(5), S103–S125.

Basu, K., & Sen, P. (2020). *Fiscal policy, deficits, and debt sustainability in India*. Economic and Political Weekly, 55(12), 32–40.

Blanchard, O. (2019). *Public debt and low interest rates*. American Economic Review, 109(4), 1197–1229.

Dreze, J., & Khera, R. (2020). *Recent social security initiatives in India*. Indian Journal of Labour Economics, 63(1), 5–18.

International Labour Organization (ILO). (2021). *India employment report 2021*. Geneva: ILO.

International Monetary Fund (IMF). (2020). *Fiscal monitor: Policies for the recovery*. Washington, DC: IMF.

Ministry of Finance (MoF). (2022). *Union Budget 2022–23: Budget at a glance*. New Delhi: Government of India.

Mukherjee, S. (2021). *India's tax reforms and GST experience*. National Institute of Public Finance and Policy (NIPFP) Working Paper, 328.

Organisation for Economic Co-operation and Development (OECD). (2021). *Economic outlook 2021*. Paris: OECD Publishing.

Panagariya, A. (2022). *India's growth and employment challenge*. Columbia University Working Paper.

Patnaik, P. (2021). *Fiscal policy in India: The constraints of debt and deficit*. Social Scientist, 49(3–4), 25–41.

Rangarajan, C., & Srivastava, D. K. (2021). *Fiscal deficit, debt, and growth in India: A reassessment*. Economic and Political Weekly, 56(34), 45–55.

Reinhart, C. M., & Rogoff, K. S. (2010). *Growth in a time of debt*. American Economic Review, 100(2), 573–578.

Reserve Bank of India (RBI). (2021). *Report on currency and finance 2020–21*. Mumbai: RBI.

Reserve Bank of India (RBI). (2022). *Annual report 2021–22*. Mumbai: RBI.

Singh, R., & Sharma, A. (2022). *Fiscal consolidation and debt dynamics in India: Evidence from the post-reform period*. Journal of Economic Policy and Research, 17(2), 1–18.

Subramanian, A. (2020). *Of counsel: The challenges of the Modi-Jaitley economy*. New Delhi: Penguin Random House India.

World Bank. (2021). *World Development Indicators*. Washington, DC: World Bank.