Public Debt and Economic Growth in India: Trends, Themes, and Emerging Research Directions

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Abstract
The relationship between public debt and economic growth has attracted sustained scholarly attention in India, particularly in the context of fiscal consolidation, development financing, and macroeconomic stability. Despite a rapidly expanding body of research, the literature remains thematically diverse and methodologically fragmented. This paper presents a comprehensive bibliometric analysis of research on public debt and economic growth in India using 330 Scopus-indexed publications spanning the period 2000–2025. Employing bibliometric techniques through the Biblioshiny package in R, the study examines publication trends, keyword structures, co-occurrence networks, trend topics, and thematic evolution. The findings reveal that economic growth, public debt, fiscal deficit, and fiscal policy constitute the core themes of the literature, supported by extensive use of advanced econometric methods such as panel data models, ARDL, cointegration, and quantile regression. Over time, the research focus has evolved from foundational macroeconomic linkages toward issues of fiscal sustainability, expenditure composition, institutional factors, and external sector dynamics. Recent years show increasing attention to capital expenditure, trade openness, and non-linear growth effects, reflecting both methodological maturation and changing policy priorities. Overall, the study provides a structured overview of the intellectual landscape of public debt research in India and identifies emerging directions for future inquiry.

I. Introduction

Public debt has emerged as a central issue in macroeconomic policy debates, particularly for developing economies where fiscal policy plays a critical role in supporting growth, financing public investment, and ensuring macroeconomic stability. In India, concerns surrounding fiscal deficits, debt sustainability, and growth trade-offs have intensified over the past two decades, shaped by structural reforms, fiscal responsibility legislation, global economic shocks, and the recent COVID-19 pandemic. These developments have generated a substantial and growing body of academic literature examining the relationship between public debt and economic growth from multiple perspectives.

While this literature has contributed valuable empirical and theoretical insights, it remains dispersed across themes, methodologies, and disciplinary boundaries. Studies differ widely in their focus, ranging from fiscal deficits and debt sustainability to expenditure composition, institutional quality, external sector linkages, and non-linear growth effects. As a result, it is often difficult to obtain a coherent understanding of how the research field has evolved, which themes dominate scholarly attention, and where potential gaps remain.

Bibliometric analysis offers a systematic and objective approach to addressing this challenge. By quantitatively mapping the structure and evolution of academic literature, bibliometric methods enable the identification of dominant research themes, methodological trends, and intellectual linkages within a field. In the Indian context, such an approach is particularly useful given the rapid expansion and increasing complexity of research on public debt and economic growth.

Against this backdrop, the present study undertakes a bibliometric analysis of Scopus-indexed literature on public debt and economic growth in India over the period 2000–2025. The paper analyses keyword patterns, co-occurrence networks, trend topics, and thematic evolution to trace how the research agenda has developed over time. By providing a structured synthesis of the literature, the study aims to enhance understanding of the intellectual contours of this field and to inform future research and policy-oriented discussions.

II. Data And Methodology

The bibliometric analysis in this study is based on data retrieved from the Scopus database, chosen for its wide coverage of peer-reviewed journals across economics, social sciences, business, and allied disciplines. A

structured search strategy was adopted to ensure comprehensive coverage of the relevant literature while maintaining thematic focus.
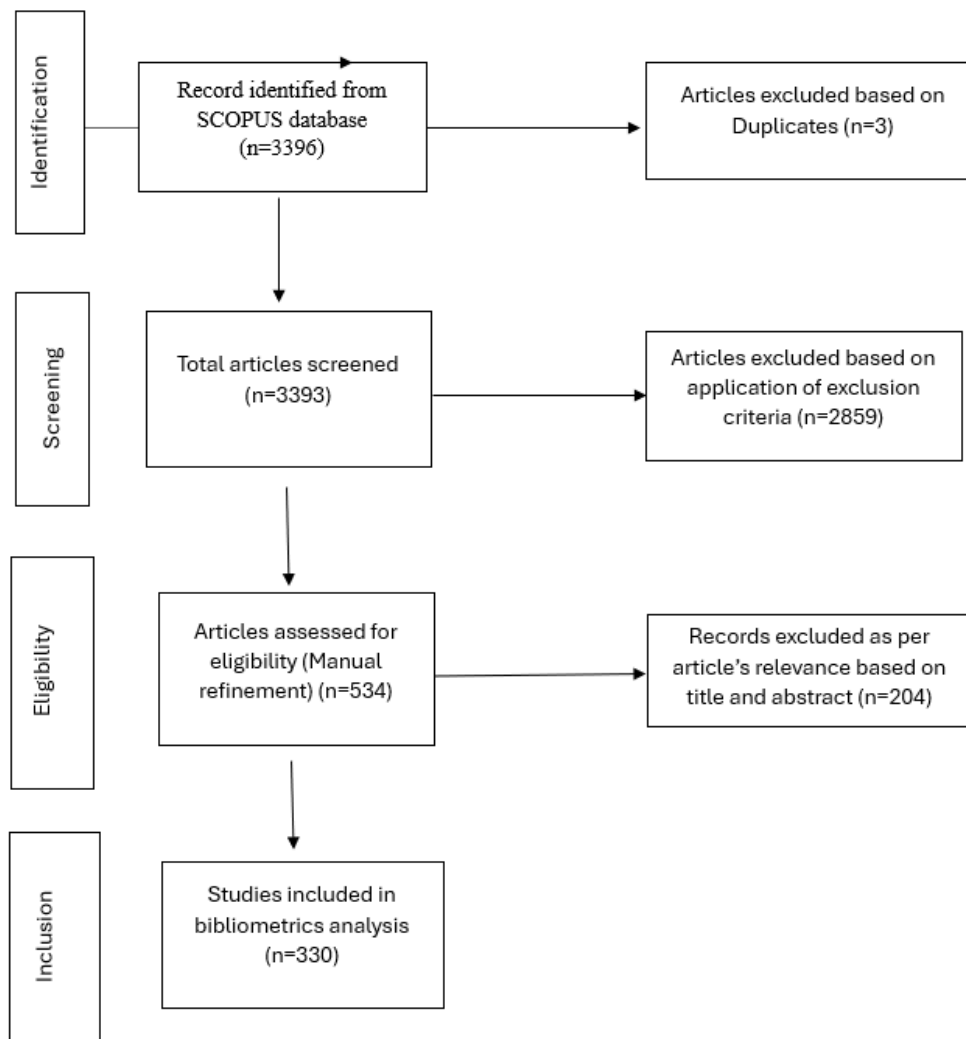
The search string combined key terms related to public debt and economic growth, including "public debt," "public borrowing," and "government debt," alongside growth-related terms such as "economic growth," "economic development," and "GDP growth," with explicit reference to India. The search was further refined by restricting the publication period to 2000–2025, limiting subject areas to Economics, Social Sciences, Business, and Arts & Humanities, and including only English-language publications. Affiliation filters were applied to retain studies associated with India or unspecified affiliations. Following is the precise search string used:

KEY ("public debt" OR "public borrowing" OR "government debt" AND "economic growth" OR "economic development" OR "GDP growth" AND "India") AND PUBYEAR > 1999 AND PUBYEAR < 2027 AND (LIMIT-TO (SUBJAREA , "ECON") OR LIMIT-TO (SUBJAREA , "SOCI") OR LIMIT-TO (SUBJAREA , "BUSI") OR LIMIT-TO (SUBJAREA , "ARTS")) AND (LIMIT-TO (AFFILCOUNTRY , "India") OR LIMIT-TO (AFFILCOUNTRY , "Undefined")) AND (LIMIT-TO (LANGUAGE , "English"))

The initial search retrieved 3,396 documents. After removing duplicate records, screening was conducted using predefined inclusion and exclusion criteria. Further refinements based on publication year, subject area, country, and language reduced the dataset to 534 documents. These were then manually screened based on titles and abstracts to ensure thematic relevance, resulting in the exclusion of 204 articles. The final dataset comprised 330 studies, which formed the basis of the bibliometric analysis. The selection process followed the PRISMA framework, ensuring transparency and replicability.

Bibliometric analysis was conducted using the Biblioshiny interface of R-Studio, which allows systematic examination of descriptive statistics, keyword patterns, co-occurrence networks, thematic evolution, and trend topics. The analysis focused on mapping the intellectual structure and thematic progression of research rather than evaluating the substantive findings of individual studies.

Figure 1. PRISMA Flow Diagram for Literature Selection Process

III. Results and Discussion

Initial Information about Selected Documents

The descriptive statistics of the selected dataset provide an overview of the scale and growth of research on public debt and economic growth in India. The 330 documents analysed span a period of twenty-five years, from 2000 to 2025, and are published across 158 sources, indicating a high degree of dispersion across journals and publication outlets. The annual growth rate of publications stands at 15.23 per cent, reflecting a steadily increasing scholarly interest in the subject.

The average age of documents is relatively low, suggesting that the literature is both current and actively evolving. An average citation count of 9.65 per document indicates moderate academic impact, while the presence of 556 authors highlights collaborative research patterns. The dataset also shows a rich keyword base, with 893 author-provided keywords and 375 Keywords Plus terms, underscoring thematic diversity within the literature.

Table 1: Summary of the selected data

Description	Results
Timespan	2000:2025
Sources (Journals, Books, etc)	158
Documents	330
Annual Growth Rate %	15.23
Document Average Age	3.86
Average citations per doc	9.65
Keywords Plus (ID)	375
Author's Keywords (DE)	893
Authors	556

Source: Researcher's work

Key Word Analysis:

The word cloud generated from the author keywords provides a clear visual representation of the dominant themes and analytical priorities in the literature on public debt and economic growth in India. As expected, "economic growth" emerges as the most prominent keyword, indicating that growth outcomes constitute the central concern of the reviewed studies. Closely following are "public debt" and "India," reaffirming that the literature is strongly anchored in the Indian macroeconomic context and explicitly focused on public borrowing dynamics.

Among fiscal variables, "fiscal deficit" appears with high prominence, highlighting the sustained attention given to deficit financing and its implications for growth and fiscal sustainability. Related terms such as "fiscal policy," "public expenditure," and "capital expenditure" suggest that a substantial portion of the literature examines the role of government spending composition and fiscal management in mediating the debt–growth relationship. The visibility of "fiscal sustainability" further indicates that concerns about long-term debt viability form an important analytical strand.

The word cloud also reflects a strong methodological orientation within the literature. Keywords such as "panel data," "ARDL," "cointegration," "quantile regression," and "threshold regression" are clearly discernible, pointing to the widespread use of advanced econometric techniques to explore both linear and non-linear debt–growth dynamics. This methodological diversity underscores the growing sophistication of empirical work in this domain.

External sector and macroeconomic control variables also feature prominently. Terms like "external debt," "trade openness," "inflation," "GDP," and "foreign direct investment" indicate that many studies adopt a broader macroeconomic framework when analysing public debt, rather than treating it in isolation. The appearance of "BRICS" and "emerging economies" suggests that Indian studies are often situated within comparative or cross-country contexts.

Notably, the presence of keywords such as "Indian states," "corruption," "financial development," and "COVID-19" reflects a more recent shift in the literature toward sub-national analysis, institutional factors, and the impact of economic shocks. This evolution signals an expanding research agenda that moves beyond aggregate national outcomes to address heterogeneity across regions and governance structures.

Overall, the keyword analysis reveals that the literature on public debt and economic growth in India is thematically rich and methodologically robust, with strong emphasis on fiscal variables, growth outcomes, and econometric modelling. The dominance of these keywords confirms the centrality of the debt–growth nexus in Indian macroeconomic research, while also pointing to emerging areas that continue to shape scholarly inquiry.

Figure 2 Word Cloud of Author's Keywords

Cooccurrence Network

The co-occurrence network of author keywords provides deeper insight into the conceptual structure and internal linkages of the literature on public debt and economic growth in India. The network is organized around "economic growth", which emerges as the most central and highly connected node, underscoring its role as the principal analytical anchor across studies. The density of links surrounding this node indicates that growth outcomes are examined in conjunction with a wide range of fiscal, macroeconomic, institutional, and methodological variables.

Four distinct yet interconnected clusters can be visually identified in the network. The first cluster, shown in red, is centred on fiscal deficit and closely linked to terms such as fiscal policy, public expenditure, monetary policy, inflation, interest rate, money supply, and cointegration. This cluster reflects a dominant strand of literature that analyses the debt–growth nexus through the lens of macro-fiscal management and stabilization policies, with particular emphasis on deficit financing and its macroeconomic transmission channels.

The second cluster, depicted in green, revolves around economic growth and incorporates keywords such as public debt, GDP, sustainability, fiscal sustainability, panel data, threshold regression, quantile regression, Indian states, and corruption. This cluster captures the core empirical literature that directly models the relationship between public debt and growth, often employing advanced econometric techniques to explore non-linearities, threshold effects, and regional heterogeneity within India.

A third cluster, illustrated in blue, brings together external-sector-oriented variables, including external debt, trade openness, foreign direct investment (FDI), domestic investment, and COVID-19. The connections within this cluster suggest that several studies situate public debt within a broader open-economy framework, examining how global integration, capital flows, and external shocks interact with debt dynamics and growth performance.

The fourth and relatively smaller cluster, shown in purple, focuses on expenditure composition, linking capital expenditure and revenue expenditure. Although less dense, this cluster highlights a policy-relevant strand of research that differentiates between productive and non-productive public spending and evaluates their distinct growth implications in the context of public borrowing.

Overall, the co-occurrence network reveals that the literature on public debt and economic growth in India is conceptually cohesive yet thematically diverse. While economic growth remains the unifying focal point, the surrounding clusters indicate strong integration of fiscal policy analysis, econometric methodology, institutional factors, and external sector considerations. This interconnected structure reflects a mature research field that increasingly recognizes the multifaceted nature of the debt–growth relationship.

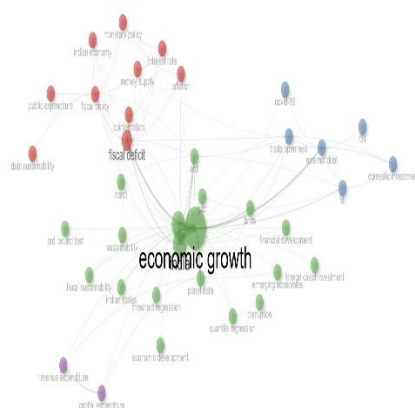Figure 3 Co-Occurrence Network

Table 2: Clusters

Cluster 1	Cluster 2	Cluster 3	Cluster 4
Fiscal deficit		Economic growth	Capital expenditure
Fiscal policy		India	Revenue expenditure
Inflation	External debt	Public debt	
Cointegration	Trade openness	Panel data	
Indian economy	Covid-19	BRICS	
Public expenditure	FDI	GDP	
Debt sustainability	Domestic investment	Indian states	
Money supply		Quantile regression	
Interest rate		Fiscal sustainability	
Monetary policy		Financial development	
		Sustainability	
		Emerging economies	
		Threshold regression	
		Corruption	
		Economic development	
		Foreign direct investment	

Trend Topics

The trend topics analysis provides insight into the temporal evolution of key research themes in the literature on public debt and economic growth in India. By tracking the emergence, persistence, and relative prominence of frequently occurring keywords over time, this analysis highlights shifting scholarly priorities and methodological developments, particularly during the recent period.

The figure indicates that "economic growth," "public debt," and "India" have remained consistently central themes, with relatively high term frequencies, especially around the period 2021–2022. Among these, economic growth stands out as the most prominent topic, reflecting its sustained role as the primary analytical focus around which debt-related discussions are framed. The persistence of these core terms suggests continuity in the central research agenda, even as the literature expands into new thematic areas.

Several macroeconomic and policy-related variables emerge as notable trend topics in the more recent years. "Fiscal deficit" and "inflation" appear prominently around 2022–2023, indicating renewed interest in stabilization concerns, particularly in the context of post-pandemic fiscal stress and rising price pressures. Similarly, "external debt" and "trade openness" gain visibility in the later years, suggesting an increasing emphasis on external sector vulnerabilities and global integration in analyses of debt and growth.
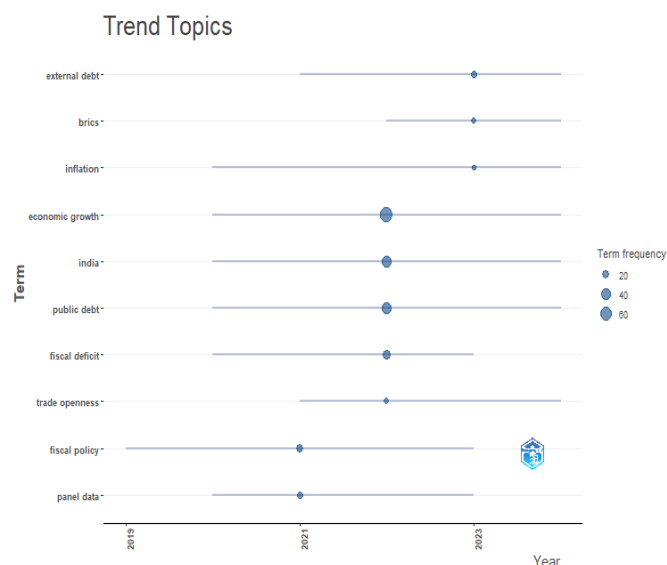
The appearance of "BRICS" as a trend topic reflects a growing comparative orientation in the literature, where India's debt–growth experience is increasingly examined alongside other major emerging economies. This trend points to a broader analytical shift from purely country-specific studies toward comparative and cross-economy perspectives.

On the methodological front, the visibility of "panel data" and "fiscal policy"—particularly around 2020–2021—highlights the continued reliance on panel-based empirical techniques and policy-oriented frameworks. These trends suggest that advances in econometric modelling and renewed policy relevance have jointly shaped recent research trajectories.

Overall, the trend topics analysis reveals a dynamic yet coherent evolution of the literature. While foundational themes such as public debt and economic growth remain firmly anchored, recent years have witnessed a diversification toward external sector issues, comparative frameworks, and post-crisis

macroeconomic challenges. This evolving thematic emphasis reflects both changing economic conditions and the maturation of empirical research on public debt and growth in India.

Figure 4 Trend topic chart

Thematic Evolution

The thematic evolution analysis traces the progression and transformation of research themes in the literature on public debt and economic growth in India across two broad periods: 2001–2020 and 2021–2025. This temporal mapping offers insight into how earlier research priorities have informed, converged into, or diverged toward more recent thematic emphases.
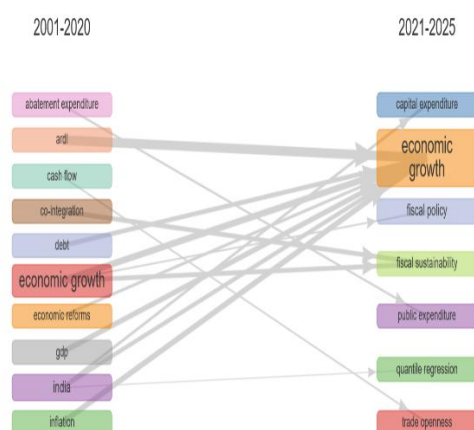
During the 2001–2020 period, the literature was characterized by a diverse yet foundational set of themes. Core concepts such as economic growth, debt, GDP, and India dominated scholarly inquiry, reflecting an initial focus on establishing the basic relationship between public borrowing and macroeconomic performance. Methodologically, this phase was marked by the frequent use of time-series techniques, as evidenced by themes such as ARDL and cointegration, alongside variables like inflation and cash flow, which were commonly employed to control for macroeconomic stability. The presence of themes related to economic reforms further indicates that early studies were closely aligned with the post-liberalization policy environment in India.

In contrast, the 2021–2025 period exhibits a noticeable consolidation and refinement of research themes. Economic growth emerges as a dominant and central node, receiving strong thematic linkages from multiple earlier concepts. This convergence suggests a shift from exploratory analyses toward more focused evaluations of how public debt influences growth outcomes. Newer themes such as capital expenditure, fiscal policy, and fiscal sustainability reflect an increased emphasis on the quality and composition of public spending, as well as concerns regarding long-term fiscal viability. The emergence of quantile regression signals growing methodological sophistication, particularly in addressing heterogeneity and distributional effects within the debt–growth relationship.

Additionally, themes such as public expenditure and trade openness gain prominence in the later period, indicating an expanded analytical scope that incorporates both domestic fiscal mechanisms and external sector dynamics. The evolution of these themes underscores a broader transition in the literature—from establishing basic macroeconomic linkages to addressing policy-relevant questions related to expenditure efficiency, fiscal discipline, and openness in a post-crisis context.

Overall, the thematic evolution analysis reveals a clear maturation of the literature on public debt and economic growth in India. Early studies laid the empirical and methodological groundwork, while recent research has increasingly concentrated on nuanced policy issues and advanced econometric approaches. This progression reflects both changing economic conditions and a deeper recognition of the complex, multifaceted nature of the debt–growth nexus.

Figure 5 Thematic Evolution

IV.   Conclusion:

This paper has examined the evolution and structure of the literature on public debt and economic growth in India through a comprehensive bibliometric analysis of 330 studies published between 2000 and 2025. The findings indicate that the literature has grown steadily over time, reflecting increasing academic and policy interest in the debt–growth nexus amid changing fiscal and macroeconomic conditions.

The keyword analysis reveals that economic growth, public debt, fiscal deficit, and fiscal policy constitute the core themes of the field, supported by a strong methodological orientation toward econometric modelling. The co-occurrence network further demonstrates that research in this area is conceptually cohesive yet thematically diverse, integrating fiscal variables, external sector dynamics, institutional factors, and advanced empirical techniques. Trend topic analysis highlights a shift in recent years toward issues such as fiscal sustainability, capital expenditure, trade openness, and comparative perspectives, while methodological sophistication has increased through the use of non-linear and distribution-sensitive models.

The thematic evolution analysis underscores a clear maturation of the literature. Early studies primarily focused on establishing basic macroeconomic relationships using conventional time-series methods, whereas more recent research has converged on policy-relevant concerns related to expenditure quality, fiscal discipline, and long-term sustainability. This progression reflects both methodological advances and the changing economic environment faced by India.

Overall, the bibliometric evidence suggests that research on public debt and economic growth in India has moved beyond narrow deficit-focused analyses toward a more nuanced and multidimensional understanding of fiscal policy and growth dynamics. Future research may benefit from deeper integration of sub-national analyses, institutional dimensions, and comparative frameworks, particularly in light of emerging fiscal challenges. By mapping the intellectual landscape of this literature, the present study provides a useful reference point for scholars and policymakers seeking to engage with the evolving debate on public debt and economic growth in India.