

Mapping Research on the Debt and Economic Growth Nexus: A Bibliometric Analysis

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Abstract

This study comprehensively analysed the debt and economic growth dynamics from 2000 to 2025. We have used the Web of Science core collection database to examine the performance analysis and science mapping. Through yearly publications and citations, influential journals, bibliometric coupling and network analysis reveals that over the decade's scholarly works in the field of debt and economic growth has risen which reflects the relevance of the topic. Keyword co-occurrence and science mapping, it has found that debates highlight around the debt-growth nexus, debt sustainability and fiscal management around the world. Cross country analysis helps us to understand about the contributions from different groups of the countries. Present study comprehensively examined all aspects related to debt and economic growth nexus and also suggests some directions pertaining to future research through bibliometric analysis methodology.

Keywords: Public Debt, Economic Growth, Publications, Citations, Bibliometric Coupling

1. Introduction

The relationship between debt and economic growth has long been one of the crucial domains. Economists, policymakers and international organizations have sought to understand whether public debt acts as a catalyst for development or a drag on long-term prosperity. On the one hand, debt financing can support productive investments in infrastructure, education and technology, thereby stimulating growth (Elmendorf & Gregory Mankiw, 1999). On the other, excessive indebtedness may impose a burden on public finances, crowd out private investment and undermines macroeconomic stability (Diamond, 1965; Krugman, 1988). The issue related to debt sustainability eroded considering the outcome of 2008 economic downturn and European sovereign debt episodes in developed and emerging economies (Checherita-Westphal & Rother, 2012). More recently the COVID-19 pandemic and the surge in government borrowing worldwide have revived concerns about the debt-growth nexus, making the issue even more relevant for contemporary research (IMF, 2021). Historically, the debt-growth debate can be traced back to classical and Keynesian traditions. Keynesian economists often emphasize the growth promoting role of deficit financed public expenditure particularly during recessions (Keynes, 2018). Conversely, neoclassical and endogenous growth theorists tend to highlight the risks of excessive debt accumulation, especially when it leads to higher interest rates, inflationary pressures or reduced investor confidence (Barro, 1979; Modigliani, 1961). Seminal contributions such as (Reinhart & Rogoff, 2010)

controversial finding that debt-to-GDP ratios above 90 percent significantly reduce growth triggered an extensive wave of empirical and theoretical studies. Although subsequent critiques questioned their methodology (Herndon et al., 2014), the discussion has not subsided; rather, it has expanded to cover heterogeneity across countries, nonlinear effects, institutional quality and the role of debt composition (Égert, 2015; Panizza & Presbitero, 2014).

Research Trends and the Need for Synthesis

Given the multifaceted nature of the debt-growth nexus research output has proliferated. Thousands of journal articles, working papers and policy briefs now analyze public debt, external debt, private debt and their implications for growth, inequality and financial stability. These studies employ diverse methodologies, panel regressions, structural models, case studies and meta-analyses (Panizza & Presbitero, 2014; Pattillo et al., 2002). The diversity of perspectives enriches the field but also complicates efforts to derive a unified conclusion. For policymakers and scholars alike, the key challenge lies in making sense of this vast and fragmented literature. Questions arise such as which countries, institutions or scholars have contributed most to the debate? What are the most influential journals and highly cited works in the field? How have research themes evolved over time, particularly before and after major crises? And which topics are emerging as future hotspots (e.g., debt sustainability in the green transition, sovereign debt restructuring or the interaction between private and public debt)? Answering these questions requires not just traditional literature reviews but also systematic data driven approaches that can map the intellectual landscape of the field. This is where bibliometric analysis plays a crucial role.

Bibliometric Analysis as a Methodological Contribution

Bibliometrics basically comprises all the quantitative techniques through that published literature examined (Alan Pritchard, 1969). Unlike narrative reviews which may be selective or subjective overview of publication trends, citation patterns and thematic clusters. While considering the databases such as Web of Science and Scopus, researchers can capture the trajectory of a field over several decades. Moreover, visualization tools like VOSviewer and Biblioshiny allow the construction of co-authorship networks, keyword co-occurrence maps and co-citation structures offering insights into how the discipline is organized and interconnected (Van Eck et al., 2010). In economics, bibliometric studies have been increasingly employed to assess fields such as financial inclusion (Aria & Cuccurullo, 2017), climate change (Wang et al., 2018), monetary policy (Bayer et al., 2019) and inequality (Martins et al., 2010). However, despite the vast literature on debt and growth relatively few attempts have been made to map its evolution using bibliometric techniques. Most existing surveys focus on meta-analytical results (Panizza et al., 2012) or theoretical syntheses (Krugman, 1988; Pattillo et al., 2002), leaving a gap in understanding the intellectual structure and research dynamics of the field. Thus, this study positions itself at the intersection of economic theory and bibliometrics. It does not aim to re-establish whether debt hinders or promotes growth; rather, it seeks to provide a comprehensive overview of how this debate has been shaped in the academic literature, and the emerging directions might be.

Objectives of the Present Study

1. To systematically analyse the evolution and structure of public debt and economic growth nexus with the help of various mapping techniques.
2. To examine the debt-growth nexus through knowledge network.

By addressing these objectives present study aimed to incorporate the debt-growth debate in the existing literature with the help of bibliometric analysis. It encompasses the existing knowledge and also contributes in formation of roadmap for future research. The present paper has structured in followings

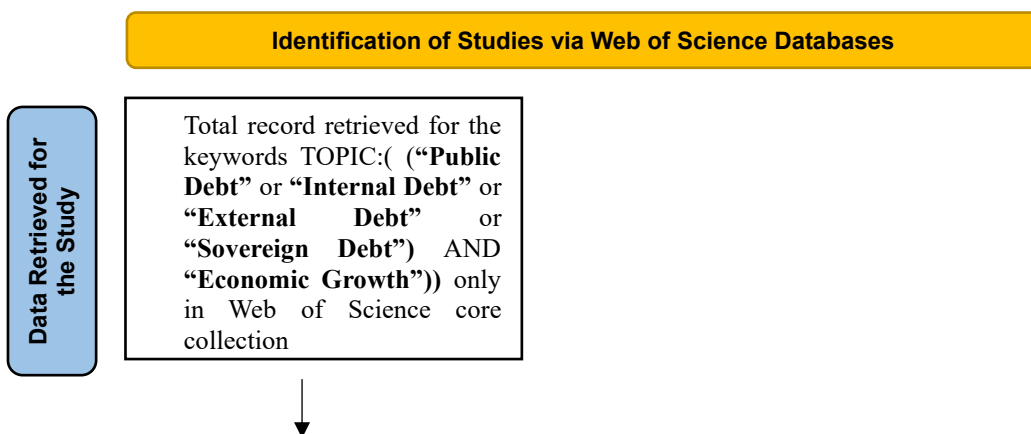
sections: Section one incorporates with introduction, section two covers the methodology, including database selection search strategy and bibliometric indicators. Section three reported the results of the analysis including productivity, impact and network visualizations. Section four incorporates the findings pertains to existing literature in larger context. Section five considers the key limitations related to databases. Finally, section six concludes the whole debate and also offer some insights for future researches.

2. Data and Methodology

The core objective of the study is to provide comprehensive overview about the domain through bibliometric analysis. For this purpose, we have retrieved the Web of Science core collection database for the period from 2000 to 2025. The reason behind selection of web of science database is the quality and reliability of researched manuscripts. The purpose of the present study is to investigate the debt-growth dynamics over the period. Considering the criterion of searched keywords or strings we have taken care of all the possible algorithms pertains to debt and growth dynamics. Therefore, topic keywords such as “public debt” or “internal debt” or “external debt” or “sovereign debt” AND “economic growth” searched in the WOS core collection.

The initial search strings provide around 1694 documents which was published till the searched date September 2025. We have also adopted the exclusion criterion for the refinement of results. The precise output retrieved from the database has been illustrated through PRISMA flowchart. While complete description about the exclusion criterion has been mentioned in the table 1. We have excluded the years from 1992 to 1998 due to few numbers of publications and considered the documents published during the period from 2000 to 2025. Subsequently, articles (including early access) and review paper included for the purpose while proceeding papers and retracted papers excluded from the list. The subject is limited to WOS categories such as economics, business finance, development, political science, history while environmental studies, green sustainable science technology, energy fuels, environmental science and others has been excluded from the category. Only articles published in English language included and others are excluded. Around 1080 documents excluded from the list applying the various exclusion criterion and finally we have considered 614 documents for bibliometric analysis in the present study. We have followed the search procedures given by (Bota-Avram, 2023; Chen et al., 2019; Donthu et al., 2021; Page et al., 2021; Sahabuddin et al., 2023). After doing all filtering the plain text file of the database had been extracted and used for the analysis in VOSviewer software.

PRISAM Flowchart



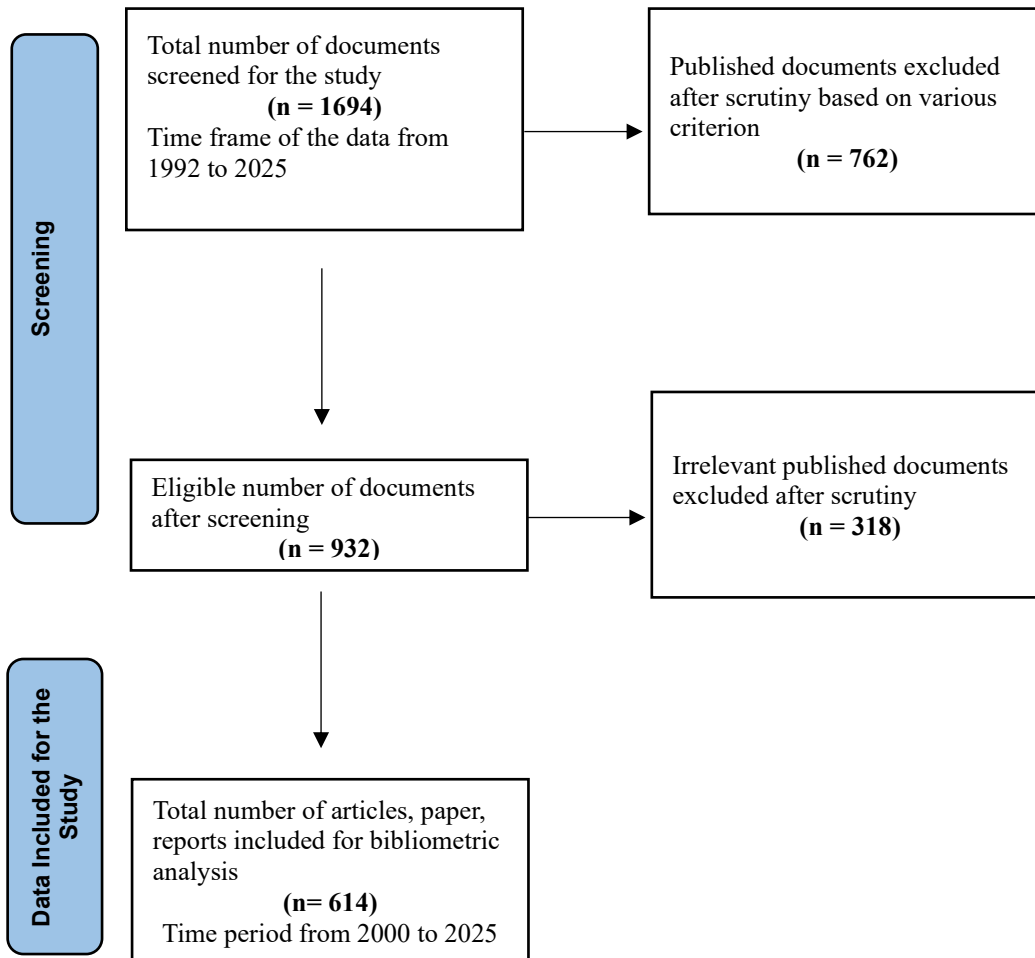


Table: 1 Description of the Search Procedure

Category	Criteria	Article Selection (inclusion & exclusion)
Keywords Searched	Topic: “Public Debt” AND “Economic Growth” or “Internal Debt” AND “Economic Growth” or “External Debt” AND “Economic Growth”	1694
Time Period (Years)	Time spanning from 2000-2025 considered. While excluded years are from 1992 to 1998 due to few numbers of publications.	90
Document Type	Articles (including early access) and review paper searched and proceeding papers and retracted papers excluded from the category	44
Subject Area	Limited to WOS categories such as economics, business finance, development, political science, history while environmental studies, green sustainable science technology, energy fuels, environmental science and others has been excluded from the category	599

Language	Only articles published in English language included and others are excluded	29
Manual	Manually excluded documents which were not relevant	318
Total articles included for the analysis	Based on all inclusion and exclusion criterion	614

Source: Author calculation and based on Cristina Bota-Avram (2023)

3. Bibliometric Analysis

We have adopted two techniques for bibliometric analysis such as performance analysis and science mapping. Former help us to incorporate the productivity and impact of research such as publication numbers over time, number of citations over time, institutional wise contribution, country wise contribution, published documents consists of high publications. while later investigates the intellectual interactions and relationships among the parameter vis-à-vis. Usually we perform followings methods while doing scientific mapping.

- Co-citation analysis
- Co-authorship
- Bibliometric coupling
- Occurrence of keywords

3.1 Results and Discussions

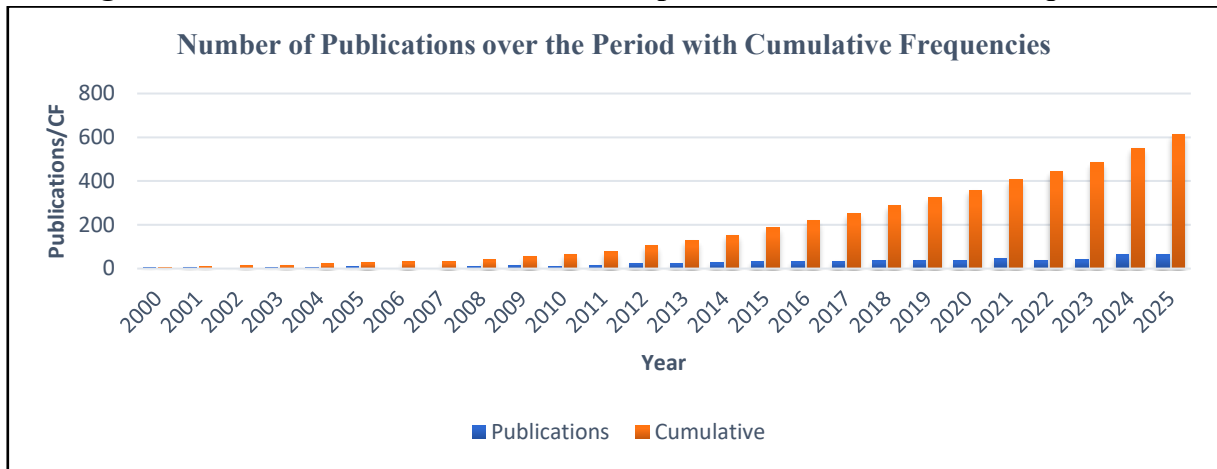
This section provides comprehensive bibliometric analysis through employing the performance and scientific analysis. Both the performance and scientific techniques of bibliometric analysis produce a detailed overview of the debt and growth relationship.

3.1.1 Performance Analysis

Publications Dynamics over the Period related to Public Debt and Economic Growth

The total 614 number of documents publications from 2000 to 2025 has been investigated. It is evident from the figure that over the period publication number has increased with some sort of deviations in number. A significant growth has been overserved during last 10 years from 2015 to 2025. While at the begging of the study period very few numbers of publications emerged in the domain of public debt and economic growth relation. The highest number of publications recorded in the year 2023, however current year data is until September 2025. It shows that the subject area now emerges significantly considering the larger debate on debt burden both at country level and worldwide. The publication number in the domain asserts that debate around public debt and economic growth rises over the period of time inconsideration of contribution. At the initial decade of study period the publication and overall performance number found was low whereas significant growth has been observed after 2014 both in publications and citations. A sharp rise has been observed after 2015 and reached highest in the year 2025. By September 2025, the cumulative volume had already approached 600 publications, despite the data for that year being incomplete. This sharp upward trajectory highlights the growing academic focus on the debt–growth nexus, driven by the rising global concerns over sovereign and external debt and their implications for economic stability.

Figure: 1 Number of Publications over the period with Cumulative Frequencies

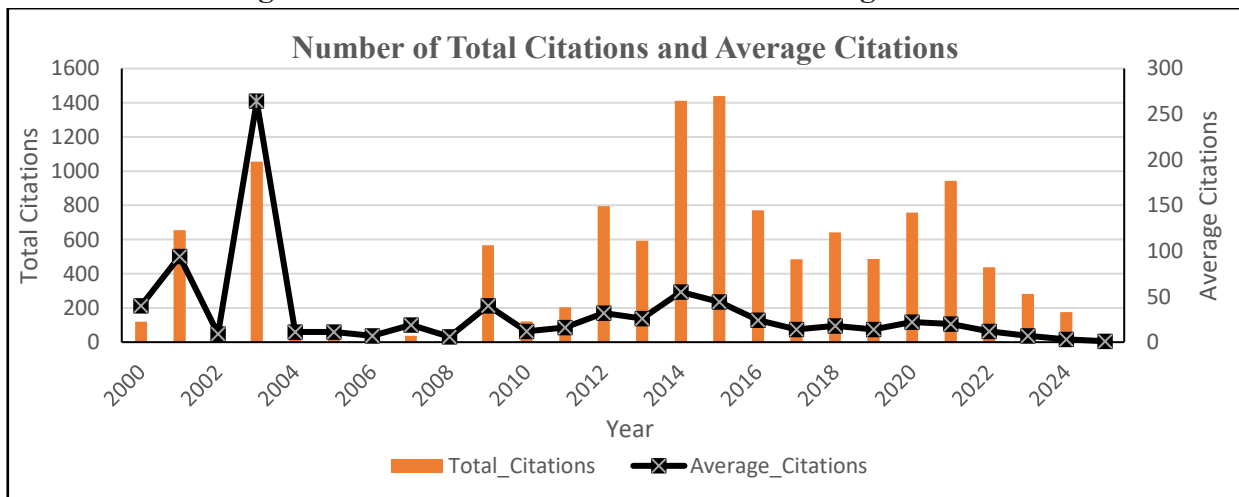


Source: Author’s analysis based on WoS database using VOSviewer

Citations Dynamics over the Period related to Public Debt and Economic Growth

There has been seen a significant increase in the citations of published documents in the field of public debt and growth analysis. From 2000 to 2010 very few numbers of citations, thereafter an expansional growth seen in the citations score. The citation dynamics of research on public debt and economic growth reveal episodic but influential peaks alongside a broader maturation of the field. A significant rise in citations around 1400 in 2003-04 whereas average citations was 250 which accommodate the pertinent contribution at early stage. A mild fall observed during 2005-2010 while upward trend experienced specifically in 2015-16. The high citations figures during from 2017 to 2022 reflect that citations score has risen significantly while slight decline has been observed in average numbers. Overall, a growth in citations and average citations encompasses the importance of vibrant debate on debt growth nexus. It may be concluded that while the outcome of research enhances, whereas impact has been more scattered across multiple studies rather than concentrated in a few major works. The sharp decline observed in 2023–2025 is largely resulting from the citation lag, as recent publications have not yet accumulated significant impact.

Figure: 2 Number of total Citations and Average Citations



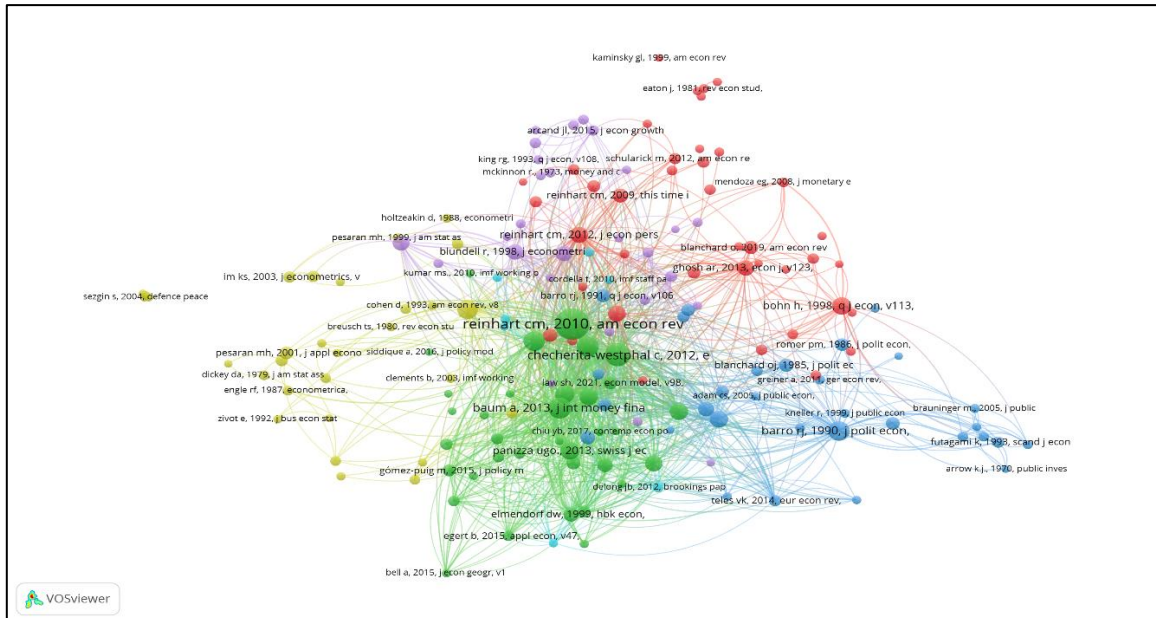
Source: Author’s analysis based on WoS database using VOSviewer

Table: 2 Citations by Sources or Journals Top 10

No.	Source or Journal	Documents	Citations	Total link strength
1	Journal of Macroeconomics	20	750	126
2	Economic Modelling	28	730	54
3	Cambridge Journal of Economics	08	631	46
4	Journal of International Money and Finance	14	515	76
5	European Economic Review	6	477	79
6	Economic Analysis and Policy	12	315	35
7	Journal of Policy Modelling	15	292	63
8	Applied Economics	27	287	99
9	Oxford Review of Economic Policy	05	275	0
10	International Review of Economics and Finance	14	199	76
11	Macroeconomic Dynamics	14	157	40

Source: Author’s Calculations based on WoS database using VOSviewer

Figure: 3 Co-citation Network Diagram by Cited References (10)



Source: Author’s analysis based on WoS database using VOSviewer

Minimum number of citations of cited references is 10. Of the 21385 cited references, 170 references meet the threshold. The co-citation network analysis figure reflects the intellectual structure of the literature. Using a threshold of 10 citations, 170 out of 21,385 cited references were mapped. The resulting clusters indicate distinct thematic areas such as green cluster, centered on Reinhart and Rogoff (2010), reflects research on sovereign debt crises; the red cluster emphasis financial crises and exchange rate dynamics (Kaminsky 1999, Mendoza 1996); while the blue cluster focuses on fiscal policy and debt sustainability

(Barro 1990, Bohn 1998); and the yellow cluster represents methodological contributions in econometrics (Pesaran 2001). The size of nodes shows the relative influence of individual studies, while the connections illustrate the extent of intellectual linkages between them.

Co-authorship analysis by author

Minimum number of documents of an author is 2. Minimum number of citations of an author is 10. Of the 1200 authors, 70 meet the threshold. Largest set of items are connected to each other is 53.

Table: 3 Co-authorship Analysis by Top Ten Author

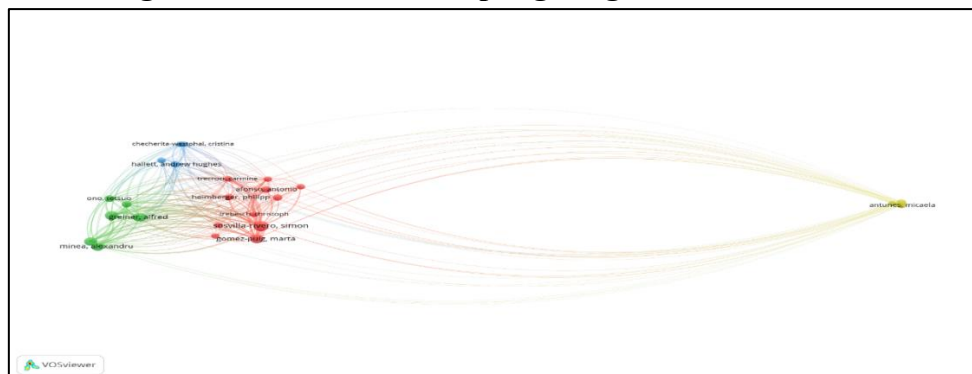
No.	Author	Documents	Citations	Total link strength
1	Rother, Philipp	3	612	99
2	Checherita-Westphal, Cristina	3	612	99
3	Presbitero, Andrea F.	2	558	70
4	Panizza, Ugo	2	459	31
5	Eberhardt, Markus	2	333	49
6	Sosvilla-Rivero, Simon	10	170	77
7	Mohsin, Muhammad	2	163	1
8	Gomez-Puig, Marta	8	155	70
9	Roventini, Andrea	2	151	9
10	Villieu, Patrick	7	126	28

Source: Author’s Calculations based on WoS database using VOSviewer

The bibliographic coupling network diagram of the authors

The bibliometric coupling analysis shows the interconnections among the authors through collaborations. Out of 1220 authors, only 24 passes the minimum criteria of 10 citations. Basically, four clusters have been formed during the connecting of authors. The high dense shows largest linkage with the other researcher based on similar sort of theme and methodology. The red cluster represents another influential group working on a related but distinct area, while the blue cluster reflects a similar, more specialized line of research. Interestingly one author in the yellow cluster appears relatively isolated but maintains connections across clusters, indicating a central bridging role in the knowledge network. In the nutshell, it is pertinent from the figure that there are less number of authors who contributes more than larger segment of authors in collaborations.

Figure: 4 Bibliometric Coupling Diagram of the Authors



Source: Author’s analysis based on WoS database using VOSviewer

Table 4 shows the top 10 journals in terms of bibliometric coupling by total link strength. The journal Applied Economics raked one with the total link strength (5308), 27 documents and around 287 citations. The rank is followed by the Journal of Macroeconomics (3815) and the International Review of Economics and Finance (3322). Both the subsequent journals citations number is also high 750 and 730 respectively. It advocates that the significance of such figures is relevant in establishment of scholarly network. The Journal of Policy Modelling (3123) and Macroeconomic Dynamics (2750) reflect a robust connection besides having a smaller number of publications. In addition, other journals such as the International Review of Money and Finance and Journal of Knowledge Economy (2664) also shows a significant linkages pattern. Whereas, journal such as Economic Analysis and Policy (2165) and Economic Change and Restructuring (1802) appear towards the bottom of the ranking, but their inclusion indicates their importance in the debate on debt and economic growth. Overall, the analysis underscores that both established macroeconomic and applied economics journals act as core platforms, fostering strong interconnections across the research landscape.

Table: 4 Top 10 Journals Interm of Bibliometric Coupling Total Link Strength

No.	Source	Documents	Citations	Total link strength
1	Applied Economics	27	287	5308
2	Journal of Macroeconomics	20	750	3815
3	International Review of Economics and Finance	28	730	3322
4	Journal of Policy Modelling	10	199	3123
5	Macroeconomic Dynamics	15	292	2750
6	International Review of Money and Finance	14	157	2699
7	Journal of Knowledge Economy	14	515	2664
8		11	45	2458
9	Economic Analysis and Policy	12	315	2165
10	Economic Change and Restructuring	07	39	1802

Source: Author’s Calculations based on WoS database using VOSviewer

The Table 5 shows the most impactful authors based on bibliometric coupling. Sosvilla-Rivero, Simon records the highest total link strength (2463), followed by Gomez-Puig, Marta (2270), indicating their important roles in the academic discourse associated to the field. Tamai, Toshiki (1394), Minea, Alexandru (1026), and Villieu, Patrick (1026) also reflects a strong significant coupling links, despite moderate citation counts. Other contributors such as Kamiguchi, Akira, Greiner, Alfred, and Trecroci, Carmine maintain significant, though comparatively lower, positions. The inclusion of Hallett, Andrew Hughes and Antunes, Micaela further reflects the diverse authorship network. Overall, the findings highlight a concentrated set of scholars whose works form the core bibliometric linkages in debt and economic growth research.

Table: 5 Top 10 Authors Interm of Bibliometric Coupling Total Link Strength

No.	Author	Documents	Citations	Total link strength
1	Sosvilla-Rivero, Simon	10	170	2463
2	Gomez-Puig, Marta	08	155	2270
3	Tamai, Toshiki	08	65	1394
4	Minea, Alexandru	07	126	1026
5	Villieu, Patrick	07	126	1026
6	Kamiguchi, Akira	04	40	935
7	Greiner, Alfred	08	110	688
8	Trecroci, Carmine	03	42	597
9	Hallett, Andrew Hughes	04	80	491
10	Antunes, Micaela	04	57	490

Source: Author’s Calculations based on WoS database using VOSviewer

Table 6 shows the most significant documents based on bibliometric coupling. It is evident that De Vita (2018) set a top notch with total link strength (318), marginally followed by Eberhardt (2015) (316) and Gomez-Puig (2018) (312). It reflects that there exists a significant connection among the literature related to the domain. Documents such as Gomez-Puig (2017) and Panizza (2014) also encompasses a considerable coupling strength. It asserts that these contributions substantially help to build a robust linkage between public debt structure and economic growth dynamics. It is also evident from the relevant contributions such as Heimberger (2023) and Law (2021) indicates that these studies are well connected in the recent world. The similar sort of robust interconnects has also been supported by studies such as Woo (2015), Jacobs (2020), and Salotti (2016). Together, these studies contribute significant in the field of public debt and economic growth nexus.

Table: 6 Top 10 Documents Interm of Bibliometric Coupling Total Link Strength

No.	Documents	Citations	Total link strength
1	De Vita (2018)	41	318
2	Eberhardt (2015)	326	316
3	Gomez-Puig (2018)	26	312
4	Gomez-Puig (2017)	27	301
5	Panizza (2014)	232	275
6	Heimberger (2023)	28	270
7	Woo (2015)	152	250
8	Law (2021)	83	245
9	Jacobs (2020)	26	226
10	Salotti (2016)	23	225

Source: Author’s Calculations based on WoS database using VOSviewer

Co-occurrence by all Keywords (author keywords and keywords plus), density visualization

Figure 5 shows the keyword co-occurrence analysis incorporating the main theme rated to the field. The total keywords recorded around 2099 and out of which 201 occurs most frequently after applying the

pertinent in the developed vis-à-vis developing economies. Public debt works as a two-way sword, when it invested for creation of productive assets then supports the economic prospects positively on the other side it may adversely affects the economic growth by interest burden, debt trap and fiscal policy perspectives. In the nutshell, the present study provides important insightful to scholarly world and policy makers to understand the recent development, significant gaps and scope in the future researches related to the public debt and economic growth nexus. Overall, the analysis serves as a foundational reference for researchers, policymakers, and practitioners, facilitating informed understanding of publication trends, research gaps, and future directions in the nexus of public debt and economic growth.

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