

“Patterns and trends in research on external public debt management”

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PATTERNS AND TRENDS IN RESEARCH ON EXTERNAL PUBLIC DEBT MANAGEMENT

Abstract

This study undertakes a comprehensive bibliometric analysis of publications pertaining to the external public debt management system. The paper aims to study the evolution of scholarly discourse surrounding the external public debt management domain, highlighting contributions, methodologies, and collaborative networks within the field. The methodology encompasses a multivariate approach, incorporating extensive searches across the three major scientometric databases: Google Scholar (PoP), Scopus (in-built Scopus tools, SciVal), and Web of Science (in-built WoS instruments). The bibliometric analysis extends to contextual, evolutionary, and spatial dimensions, allowing for a comprehensive understanding of the identified clusters. The ensuing clusters serve as a roadmap, categorizing publications based on their contextual relevance, evolutionary trajectory, and spatial focus, which enhances the identification of key works in the field, facilitating a nuanced understanding of the current state of external public debt management research. The synthesis of findings from the content-contextual block emphasizes a primary orientation toward understanding the dynamic interplay between external public debt management and economic development. Furthermore, the contextual-temporal block identifies four distinct stages in the evolution of research focus, highlighting the shifting emphasis over time. A discernible pattern of heightened research activity in external public debt management across various countries in recent decades is revealed through spatiotemporal analysis. The interdisciplinary nature of this field is underscored by the dominance of economics, econometrics, finance, business, management, and accounting in dedicated research.

Keywords

external public debt, public debt management,
bibliometric analysis, research trends, debt sustainability,
fiscal policy, research gaps

JEL Classification

H60, H63, F34

INTRODUCTION

Public debt is crucial for governments to finance their activities, stimulate economic growth, and respond to unforeseen circumstances. In 2022, the total global public debt, encompassing domestic and external debt of general governments, reached an unprecedented USD 92 trillion. This remarkable figure signifies a substantial increase compared to previous years, highlighting the significant fiscal challenges nations worldwide face. The surge in public debt underscores the urgent need for prudent fiscal management and effective economic policies to ensure sustainable economic growth and stability amidst evolving global financial landscapes. This increase is attributed to economic downturns, increased borrowing for development projects, and fiscal repercussions of global crises. It is worth noting that the growth in external public debt is the main driver behind the increase in the overall state debt of most countries worldwide.

A high level of external public debt presents multifaceted risks and challenges for the economy, as a significant portion of government revenues is directed toward servicing the debt. This diversion of funds

can hinder essential public services and investments in critical sectors. An excessive debt level can also lead to fiscal instability, potentially resulting in inflation, currency devaluation, and financial crises.

However, external public debt is not inherently harmful to the economy; issues can arise when government debt grows uncontrollably. The interdisciplinary nature of external public debt necessitates a comprehensive analysis that integrates perspectives from economics, finance, political science, and international relations.

Bibliometric analysis is an invaluable tool for identifying trends, determining seminal publications, and assessing the impact of research in a specific field. In evaluating and managing external public debt, bibliometric analysis provides a systematic and empirical foundation for studying the growth, diversity, and impact of scholarly output. By meticulously studying the vast body of literature on this topic, one can gain insights into the evolution of paradigms, new methodologies, influential authors, and institutions, thereby deepening the understanding of the dynamic landscape of external public debt management.

1. LITERATURE REVIEW

The management of external debt holds paramount importance in the realm of economic policy and international finance. As nations navigate the complexities of global financial interdependence, understanding the dynamics and scholarly contributions in external debt management becomes crucial.

In general, the issue of public debt formation and management is one of the most studied in the academic economic literature. The significant increase in the external public debt of many countries has raised the issue of optimizing the assessment, analysis, and development of an effective system of external public debt management and ensuring external debt security (Shkolnyk et al., 2021).

The literature on external debt management is grounded in theoretical frameworks that explore the relationships between public debt, economic growth, and fiscal policy. Notable contributions by economists like Reinhart and Rogoff (2010), Kaya (2020), Bogdan and Lomakovich (2021), and Majid et al. (2022) have shaped the understanding of how external debt can impact a nation's economic stability and growth prospects.

Scholars have conducted extensive empirical analyses to assess the sustainability of external debt levels. This includes examining debt-to-GDP ratios, debt service capacity, and other financial indicators (Chi, 2023; Horvathova et al., 2022; Baniata et al., 2023).

A considerable amount of research is devoted to the issues of active and passive external debt manage-

ment. It is noted that countries use active or passive strategies to manage their external public debt. Active management involves using derivatives and other financial instruments to hedge risks, while passive management involves adhering to a predetermined borrowing plan. Pulay (2018) discusses the trade-offs between these strategies.

Ghosh et al. (2015) proposed their own methodologies for calculating debt safety indicators. They emphasize the aggregation of various external debt-related indicators, such as the external debt-to-GDP ratio, the external debt service ratio, and foreign exchange reserves, to obtain a comprehensive picture of the country's debt sustainability.

Bogdan (2013) focused on emerging market economies and their external debt sustainability challenges. The study emphasizes the need for a holistic assessment that considers factors beyond traditional debt indicators, including macroeconomic stability, political risks, and global economic conditions. Empirical evidence also suggests that fluctuations in the money supply and exchange rates can significantly affect a country's ability to service its external public debt, especially in developing economies (Aid & Benelbar, 2023). Aiyedogbon et al. (2022), Gnegne and Jawadi (2013), Galiński (2015), and Redo and Siemiątkowski (2022) emphasized the need to use integrated indicators for debt monitoring and management, taking into account the debt structure and the country's ability to repay. Moreover, studies underline the necessity of introducing adaptive management practices within public financial institutions to ensure responsive and efficient handling of external public debt (Grynko & Gviniashvili, 2015).

In the context of Ukraine, Filatova et al. (2022), Mikhnevych et al. (2020), Karapetian and Rybak (2011), Petrushenko et al. (2022), and Naumenkova et al. (2023) have studied the problems of external debt and proposed methodologies for assessing and managing debt sustainability. An important factor affecting external debt dynamics in Ukraine is the functioning of systemically important domestic banks, which influence both the demand for sovereign borrowing and its sustainability (Buriak et al., 2015).

Despite the existing studies of integrated indicators of external debt security, there is a lack of research on calculating such an indicator for Ukraine (Tsaruk, 2007).

The involvement of international financial institutions, such as the International Monetary Fund (IMF) and the World Bank, in providing policy advice and financial assistance to countries facing debt-related challenges is a significant area of research. Gentle (2021) explored the effectiveness and limitations of these institutions in managing external debt.

Debt restructuring and crisis management strategies are critical aspects of external debt management. Stawska (2015), Klein (1994), and Reinhart and Rogoff (2010) examined historical patterns of sovereign debt crises and the effectiveness of various restructuring approaches in resolving debt-related challenges.

Molotok (2020) and Dudchenko (2020) described the methodology of bibliometric analysis. The bibliometric analysis of public debt in the context of the need to develop an effective public debt management mechanism during wartime (military conflicts) was conducted by Zhuravka et al. (2021a, 2021b), Harutyunyan (2023), and Razinkova et al. (2023).

Considering the significant number of publications exploring the significance and role of external government borrowings, as well as the conceptual foundations of external public debt management, there is a necessity to conduct a bibliometric analysis of scholarly works concerning this topic. The study aims to identify key trends, establish paradigms, and ascertain influential institutions in this field.

Additionally, such an analysis will facilitate identifying research gaps, analyzing the popularity of specific thematic directions, and pinpointing prospective avenues for further research in this area. The outcomes of the bibliometric analysis are crucial for defining priorities in research and devising effective strategies for managing external government debt in the contemporary conditions of globalization and economic instability.

The primary objective of this paper is to conduct a rigorous systematic review and synthesis of scholarly literature focused on external public debt management, aiming to distill critical insights, methodologies, and trends within the field, offering a nuanced understanding of the challenges, strategies, and best practices associated with the management of external public debt.

2. METHOD

This study employs various specialized methods and tools for conducting bibliometric analysis of external public debt management. These methods and tools include:

- utilizing the embedded tools of the Scopus database by Elsevier and Web of Science by Clarivate Analytics for preliminary analysis of publications, followed by importing their bibliometric data into VosViewer;
- employing the VosViewer software tool for implementing cluster analysis and visualizing bibliometric maps with clear demonstrations of connections and chronology;
- using the Publish or Perish software tool for analyzing publications in Google Scholar, with a primary focus on the most cited sources;
- applying analytical online tools like Google Trends to study internet queries related to external public debt management.

The information base of the study is a selection of scientific publications obtained from the bibliometric databases Scopus, Web of Science, and Google Scholar. The analysis covers the period from 1991 to August 2023.

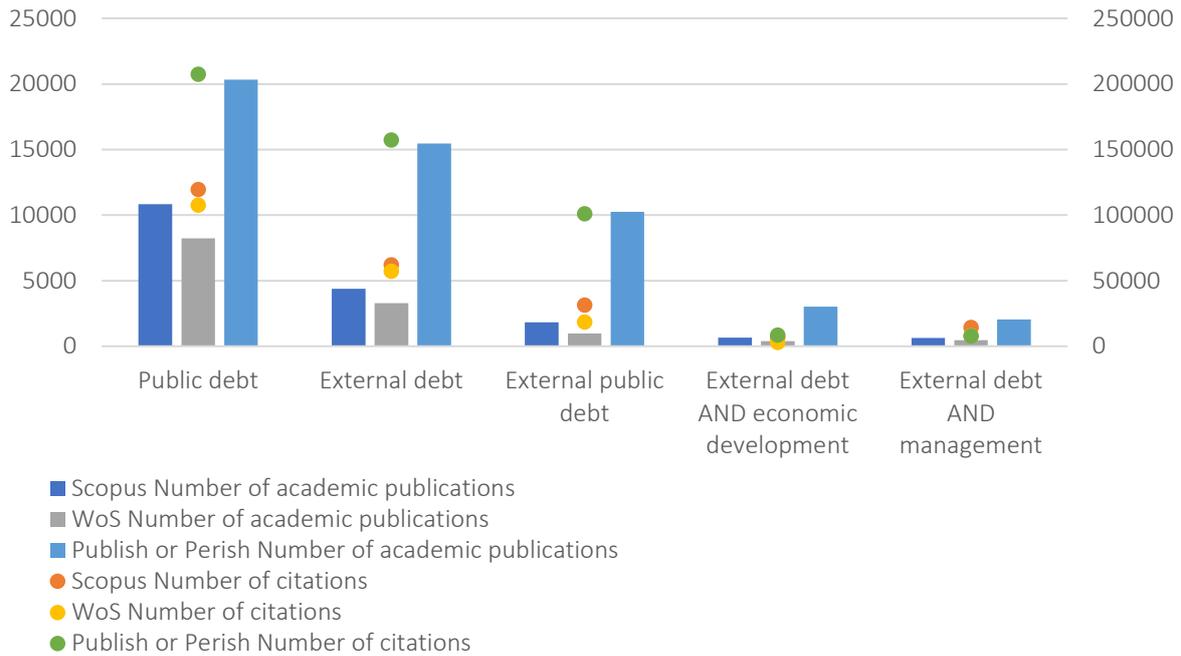


Figure 1. Statistical analysis of scientific publications

3. RESULTS AND DISCUSSION

Figure 1 shows the results of a statistical analysis of scientific publications and the number of their citations on external public debt within the three largest scientometric databases, Scopus, WoS, and Google Scholar (using the Publish or Perish tool). The queries were initially refined, focusing exclusively on academic contributions between 1991 and August 2023. Drawing insights from the data depicted in Figure 1, it becomes evident that the substantial volume of scholarly publications and their corresponding citation counts

within the domain of external public debt management stand as robust indicators, affirming the dynamism, significance, and pertinence of research endeavors in this field. This abundance of publications and citations attests to the vigor and continuous scholarly engagement devoted to exploring and comprehending external public debt management.

Figures 2 and 3 offer a comprehensive view of the evolving trends in research pertaining to public debt management in the scientometric databases Scopus and WoS from 1991 to August 2023. Additionally, it

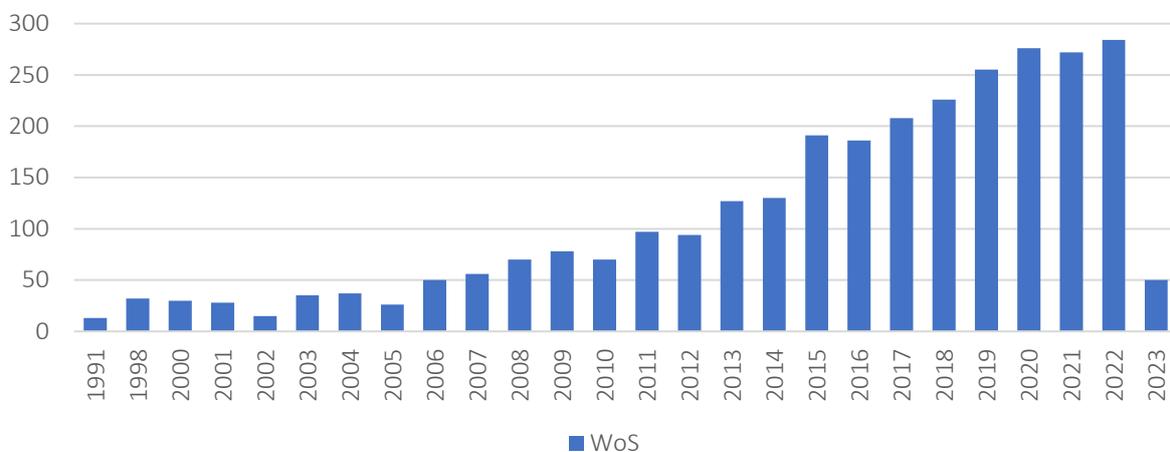


Figure 2. Dynamics of published articles in the WoS database, from 1991 to August 2023, number of articles

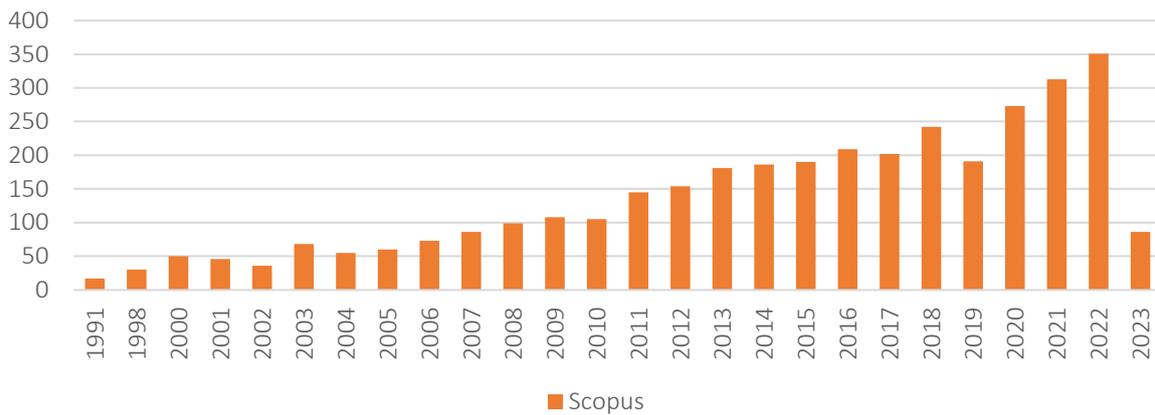


Figure 3. Dynamics of published articles in the Scopus database, from 1991 to August 2023, number of articles

illuminates a mounting enthusiasm for the subject within the framework of the present-day global economic milieu. This escalating interest underscores the heightened relevance and urgency attached to the study and governance of public debt in light of contemporary economic challenges and opportunities.

Figures 2 and 3 show a steady rise in scientific publications focused on public debt management from 1991 to 2022. It is significant to highlight that the lion’s share of these publications delves into various facets of external public debt management. These encompass crisis mitigation strategies, restructuring approaches, comprehensive evaluation and analysis of public debt, and formulation of debt management strategies informed by meticulous calculations, scrutiny of financial markets, and adept execution of economic policies. Consequently, the robust scholarly interest and the burgeoning body of research in this domain underscore the salience and relevance of matters concerning external public debt management within contemporary economic discourse and operational frameworks. The comparatively

lower publication count in 2023 can be attributed to the dataset’s partial coverage for the year.

To substantiate the assertion regarding the escalating interest in the role of external public debt and the theoretical framework governing its management, the study harnessed data from the Google Trends service to scrutinize the frequency of user inquiries on this subject. Consequently, Figure 4 delineates the trajectory of user-generated searches concerning the realm of “external public debt management” on a global scale, spanning from 2018 through August 2023. This visual representation furnishes compelling evidence of the curiosity and engagement surrounding this critical financial domain.

Indeed, the trajectory of search queries does not exhibit a prominently upward trend; however, it does indicate a sustained and consistent interest in external public debt management.

In light of the extensive body of scholarly works dedicated to external public debt, an in-depth



Figure 4. The Google Trends analysis of internet user queries related to external public debt management spanning from 2018 to August 2023

Source: VOSviewer.

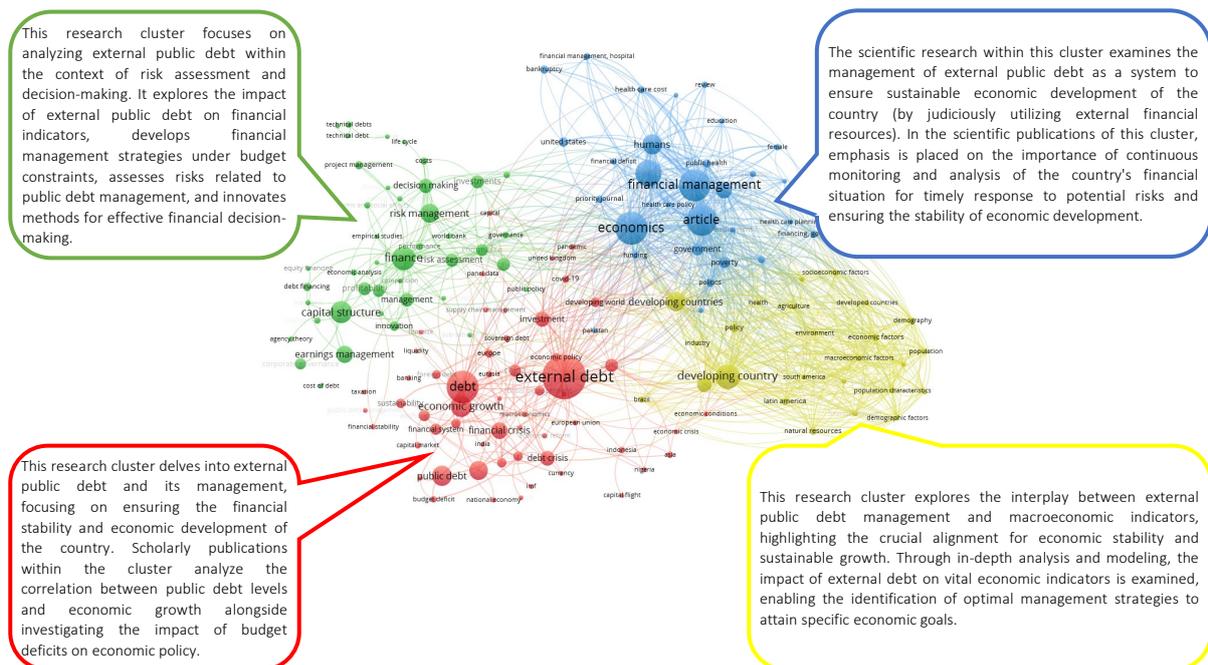


Figure 5. Cluster analysis of scientific publications on the topic of “external public debt management”

clustering analysis was executed to elucidate the primary thematic groupings present in this literature (for example, possible topics may include analysis of public debt efficiency, strategies for its management, economic consequences, etc.). This approach allows for a more nuanced understanding of the multifaceted aspects surrounding external public debt management.

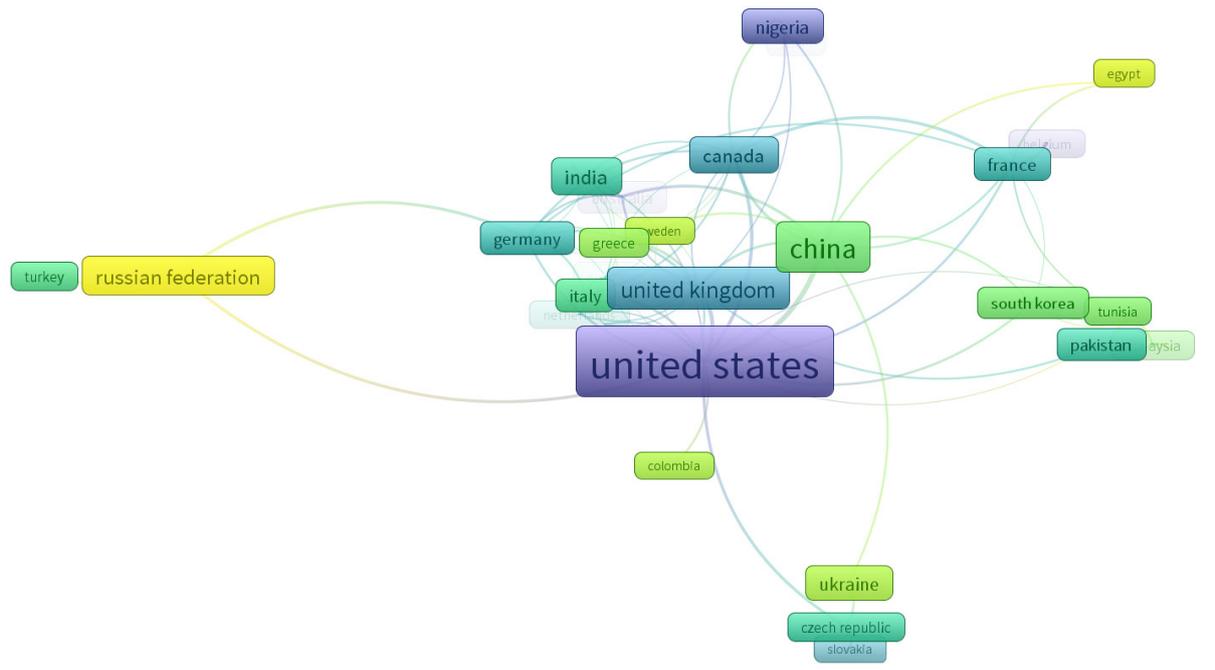
Figure 5 illustrates the interconnections between the concept of “external debt management” and other related concepts. This visualization provides valuable insights into the intricate web of relationships within this domain of study. Figure 5 presents the outcomes of a comprehensive cluster analysis conducted on scientific publications on “external public debt management.” The analysis, based on the examination of relevant scientific works indexed in the Scopus bibliographic database, has led to the identification of four distinct clusters, denoted by distinct colors: green, red, yellow, and blue. Notably, a larger circle diameter within the figure indicates a higher frequency of mention of the respective concept as a keyword in conjunction with the concept of “external debt management.”

Furthermore, this cluster analysis provides a nuanced understanding of the intricate relationships

among various external public debt management aspects. Discerning distinct thematic clusters makes it evident how different concepts interplay and contribute to the broader discourse in this field. This visualization aids in the identification of prominent areas of research focus and their relative importance within the realm of external public debt management.

The amalgamation of findings reveals a predominant focus on exploring the dynamic relationship between external public debt management and the pivotal goal of fostering sustainable economic development within a country. Notably, substantial emphasis is placed on discerning correlations with crucial macroeconomic indicators and formulating financial management strategies tailored toward attaining specific economic objectives. These studies serve as the bedrock for crafting efficacious approaches to external public debt management, thereby laying the groundwork for sustainable economic progress on a national scale.

Moreover, a complex web of intersections and interdependencies exists among the identified clusters. The management of external public debt exerts a pervasive influence on all facets of a nation's life, particularly in the economic



up until 2010	2011–2013	2014–2015	2016–2017	2018–2020	2020–till present
The USA, Australia, Nigeria, and Belgium demonstrated high activity in research on external debt management	The United Kingdom, Canada, and Thailand showed a strong interest in studying issues related to external public debt management	Germany and France emerged as significant players in research on this topic during this period	Spain, Italy, India, and the Czech Republic displayed significant scientific interest in external public debt management	China, South Korea, and Tunisia took the lead in research on this subject	Saudi Arabia, Egypt, Ukraine, and Russia have been prominent in this area. Regarding the last-mentioned time interval, it is worth noting the activation of research during this period related to external public debt management in the context of war (against the backdrop of the war in Ukraine)

Figure 8. Geographical insights in external debt management bibliometric analysis

to formulate effective, globally informed approaches to external public debt management.

Based on the results of spatial clustering, eight groups (clusters) of countries were identified (researchers from each cluster have joint publications on external public debt management):

- countries of Southeast Asia, Oceania, and Central Europe (Thailand, India, Greece, Germany, Australia, Sweden – red cluster);
- countries of Asia and Africa: South Korea, Saudi Arabia, Tunisia, Pakistan (green cluster);
- countries of Southwestern and Central Europe: Italy, the Netherlands, Spain, the United Kingdom, Portugal, Switzerland (blue cluster);

- countries of North America, Africa, and Asia: Canada, Nigeria, China (yellow cluster);
- countries of North Africa and Western Europe: Egypt, France, Belgium (purple cluster);
- countries of Southwest Europe and America: Great Britain, Colombia, Brazil (blue cluster);
- Eastern European countries: Ukraine, Czech Republic, Slovakia (orange cluster);
- Russia, Turkey (brown cluster).

The analysis revealed a network of connections among researchers focused on managing external public debt, with proximity playing a significant role. Interestingly, notable clusters (specifically, the first, second, fifth, and fourth

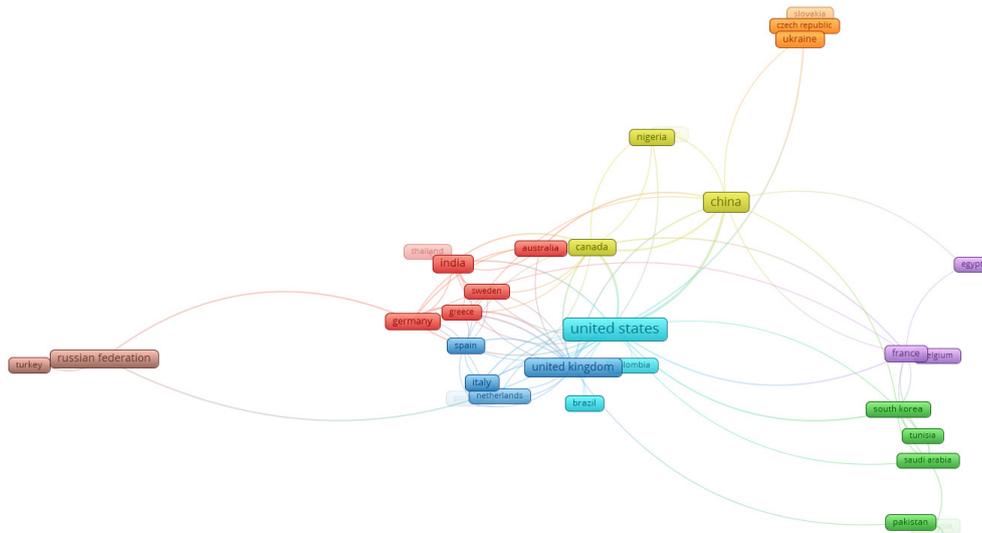


Figure 9. Collaborative scholarly network map: Researchers' affiliation-based interactions in external public debt management studies

Source: Scopus database.

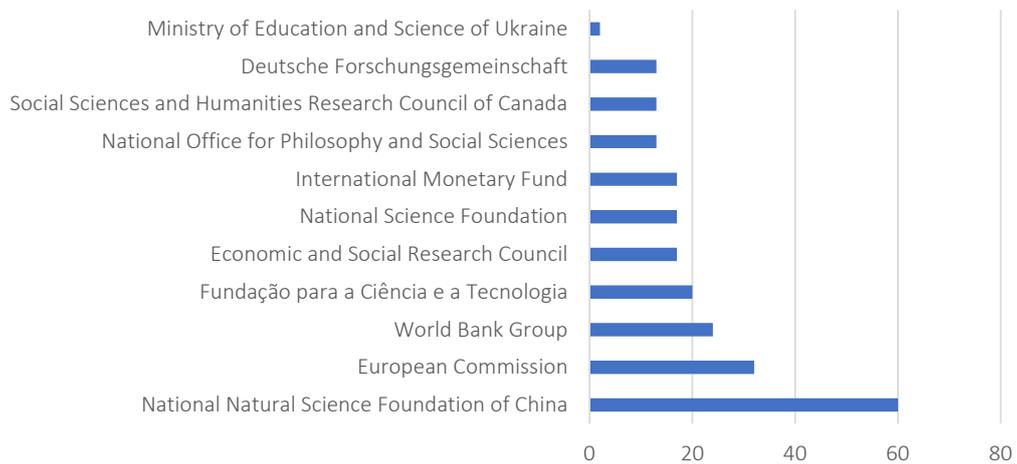


Figure 10. Organizations funding scientific research in Scopus

Source: WoS database.

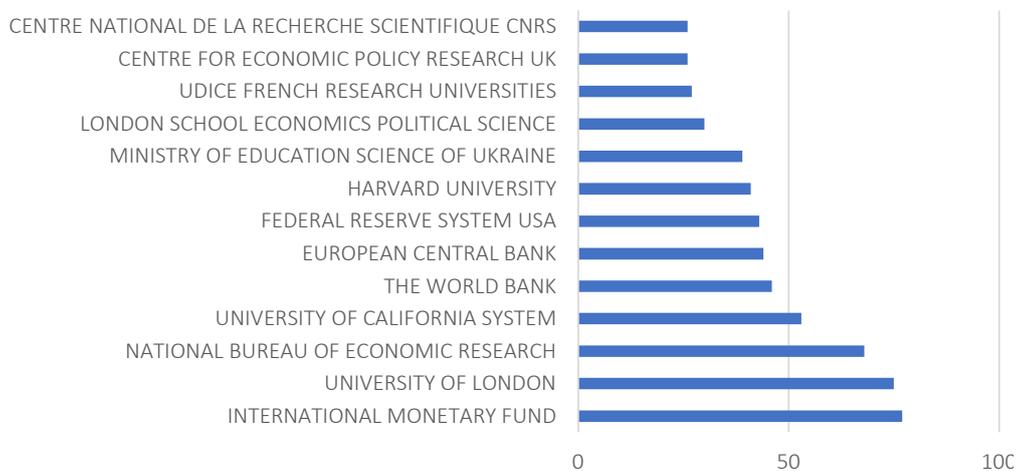


Figure 11. Organizations funding scientific research in WoS

Source: Elsevier SciVal tools.

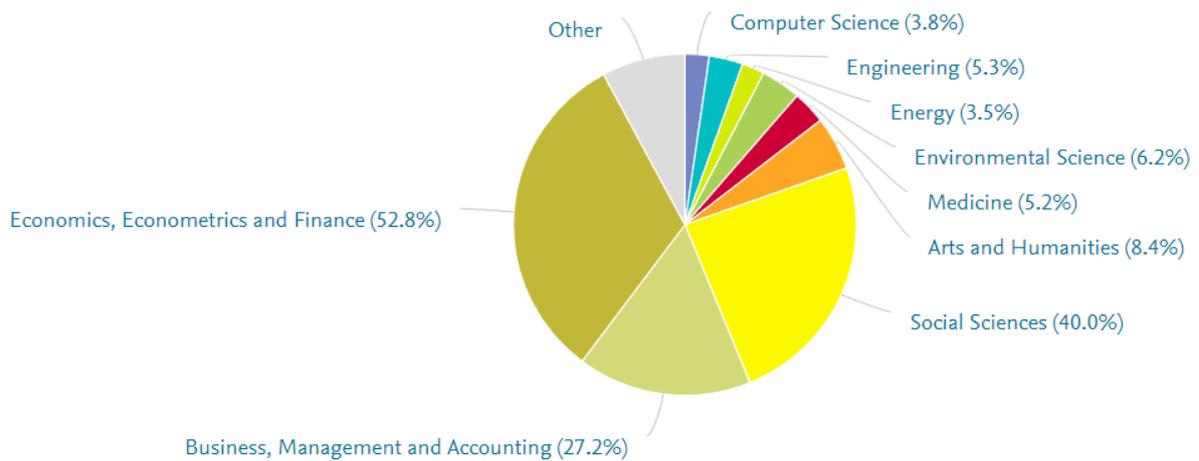


Figure 12. Structural analysis of research on external public debt management by subject areas

clusters) foster collaboration among experts from various continents. This suggests that collaborative efforts in this field extend beyond geographical boundaries, emphasizing shared research interests and objectives. This interconnectedness is a testament to the global relevance and impact of research on external public debt management.

Regarding geographic dimension, the leaders in scientific research on “external public debt management” are the USA and China. Noteworthy research activity is also observed in developed European Union countries, including France, Germany, and Italy. Analyzing data from the Scopus and WoS databases (see Figures 10 and 11), it becomes evident that the most prolific

Source: Elsevier SciVal tools.

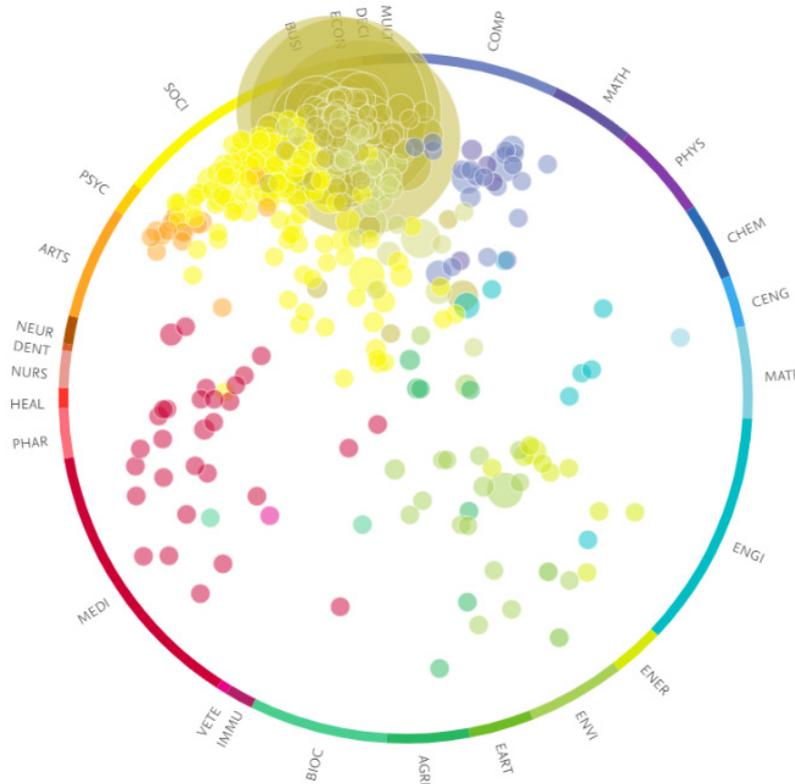


Figure 13. Key topics and thematic clusters in research areas of external public debt management

contributors to publications on external public debt are the International Monetary Fund, the National Natural Science Foundation of China, the European Commission, and the University of London. This underscores the subject's significance for the USA, China, and the EU, which, according to the data, are among the entities grappling with the "largest debts".

An essential aspect of the bibliometric analysis of scientific publications on external public debt management is their assessment by subject area, which allows for assessing the importance of this area in the broader context of contributions to the scientific community. This analysis can reveal how necessary this area is for developing modern economies and financial systems. In addition, a thorough study of the subject area can identify potential shortcomings or gaps in research, allowing focus on specific aspects that require further study (Figure 12).

The examination of subject areas in scientific research centered on external public debt management highlights a prevalent emphasis on economics (economics, econometrics, and finance) and management (business management and accounting). This underscores the interdisciplinary nature inherent in the study of external public debt. Additionally, the field affiliations of the analyzed publications exhibit diversity, albeit it is unsurprising that most empirical studies on external public debt management possess an economic and financial orientation.

Figure 13 illustrates the thematic focus of these publications, demonstrating their categorization into thematic clusters within each research sphere associated with the chosen categories of external debt management.

The leading 100 clusters based on research productivity (Scholarly Output) predominantly encompass the following domains:

- ECON – economics, econometrics, and finance linked to economic research directions;
- DECI – decision sciences pertaining to studies on decision-making processes;

- MULT – multidisciplinary research. This is corroborated by the density and size of the bubbles.

It is noteworthy that the most prominent topics within these subject areas, in each of the research spheres concerning external debt, are as follows (in descending order of determinacy percentiles):

- sovereign default, euro area, debt;
- currency crises, financial crises, capital flows;
- capital structure.

Based on the findings of the bibliometric analysis, it is evident that research on the management of external public debt occupies a pivotal position within the realm of financial and economic studies. Moreover, scholarly and user interest in this domain has notably surged recently. A comprehensive review of this body of research underscores that studies on external public debt management are dynamic and subject to evolutionary shifts over time. The analysis has facilitated a deeper and more intricate exploration of theoretical facets associated with external public debt management.

Furthermore, it is crucial to highlight that this analysis has enabled a comprehensive and in-depth synthesis of theoretical dimensions concerning the role of external public debt management in fostering a country's economic development across various crucial parameters (contextual, evolutionary, spatial). This lays a solid foundation for future empirical research endeavors in this direction.

The examination of scholarly publications in this field has revealed noteworthy developments, shedding light on the evolution of research themes, methodologies, and collaboration networks. This study identifies several prominent themes that have captured the attention of researchers in the field of external public debt management. These include, but are not limited to, debt sustainability, risk assessment, policy implications, and the impact of global economic fluctuations on debt dynamics. Comparisons with existing literature demonstrate a dynamic landscape, with a dis-

cernible shift in recent years toward addressing contemporary challenges and adapting methodologies to reflect the evolving complexities of debt management in a rapidly changing global economic environment.

The bibliometric analysis also investigates methodological approaches employed in the literature. Findings indicate a growing prevalence of quantitative methods, reflecting an increasing reliance on statistical tools and modeling techniques to assess and predict external public debt dynamics. A comparison with Karapetian and Rybak (2011) and Ghosh et al. (2015) reveals a shift away from purely qualitative analyses, suggesting a maturation of the field and a greater emphasis on evidence-based decision-making in debt management research.

Collaboration among researchers is a crucial aspect of academic progress. This study evaluates collaborative networks within the field of external public debt management, identifying key researchers, institutions, and regions that play pivotal roles in shaping the discourse. A comparative analysis with previous research (Gnegne & Jawadi, 2013; Pulay, 2018) highlights evolving patterns of international collaboration, with an increasing interconnectedness among researchers from diverse geographical locations.

In examining the content of scholarly publications, this analysis recognizes the integration of interdisciplinary perspectives in recent research. This trend is evident in the incorporation of insights from economics, finance, political science, and other relevant disciplines. This complements Aiyedogbon et al. (2022) and Gentle (2021), who emphasized the link between debt policy and financial discipline.

It is crucial to acknowledge the limitations of this study. While the bibliometric analysis offers valuable insights, it is constrained by the availability and coverage of databases, potential biases in keyword selection, and the exclusion of non-English language publications. Future research could address these limitations and further explore specific subtopics or regional variations within the broader external public debt management domain.

The findings align with those of Filatova et al. (2022), who also conducted a bibliometric analysis. While both studies share commonalities, such as the increasing use of quantitative methods, this study expands upon this by examining external public debt management, offering a more nuanced understanding of the unique challenges associated with international debt dynamics.

CONCLUSION

The paper aims to conduct a meticulous and systematic review of scholarly literature concerning external public debt management, employing a robust methodological approach. The study unveils a nuanced landscape within external debt management by leveraging bibliometric analysis, specifically utilizing VOSviewer tools on Scopus-indexed scientific publications. The network map delineates four clusters, each encapsulating a specialized focus within this critical economic policy domain. The size of each cluster on the map signifies the frequency of concept mentions alongside 'external debt management' in indexed articles, providing a visual representation of thematic emphasis.

Synthesizing results from the content-contextual block reveals a predominant focus on understanding the dynamic interplay between external public debt management and sustainable economic development. The contextual-temporal block further identifies four discernible stages in the evolution of research emphasis, underscoring the evolving priorities over time. A spatiotemporal analysis exposes heightened research activity in external public debt management across various countries in recent decades, with notable shifts in geographical research centers indicating evolving global interests.

Identifying eight country clusters based on spatial clustering illustrates collaborative research endeavors, reflecting shared interests and joint publications on external public debt management. In

terms of subject areas, the dominance of economics, econometrics, finance, business, management, and accounting underscores the interdisciplinary nature of this field. This comprehensive analysis not only identifies key theses in external public debt management but also establishes a solid foundation for future research and the formulation of effective strategies in the context of globalization and economic instability. These findings serve as a valuable resource for policymakers, researchers, and practitioners, offering critical insights into this crucial facet of economic governance.

AUTHOR CONTRIBUTIONS

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Formal analysis: Mila Razinkova, Natalia Nebaba.

Funding acquisition: Mila Razinkova.

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Methodology: Mila Razinkova.

Project administration: Tetiana Grynko, Rostislav Botvinov.

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Validation: Tetiana Grynko, Rostislav Botvinov, Dmytro Pryimachenko.

Visualization: Mila Razinkova.

Writing – original draft: Mila Razinkova, Tetiana Grynko, Rostislav Botvinov.

Writing – review & editing: Mila Razinkova, Natalia Nebaba, Dmytro Pryimachenko.

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