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DYNAMICS OF PUBLIC INTEREST IN PUBLIC DEBT MANAGEMENT IN THE CONTEXT OF ENSURING ECONOMIC SECURITY¹

ДИНАМІКА СУСПІЛЬНОГО ІНТЕРЕСУ У СФЕРІ УПРАВЛІННЯ ДЕРЖАВНИМ БОРГОМ В КОНТЕКСТІ ЗАБЕЗПЕЧЕННЯ ЕКОНОМІЧНОЇ БЕЗПЕКИ

The article analyzes the trends in the dynamics of public interest in public debt management in the context of ensuring debt and economic security. The methodology is based on using the Google Trends web tool and the corresponding scale for measuring the popularity of search queries – Google Trends Scale. Using Google Trends line charts, a trend analysis was carried out using the keywords «economic security», «public debt management» and «debt sustainability». The key parameters of the analysis are: 1) timeframe: from August 2019 to August 2024; 2) geographical boundaries: Ukraine and the whole world, with a special emphasis on the EU countries. The article proposes to assess the interest of Internet users within three levels on the GT scale (low (0-29 points), medium (30-74 points) and high (75-100)).

Key words: public debt, economic security, debt management, trend analysis, public interest, economic policy.

У статті проаналізовано тенденції у динаміці суспільного інтересу, щодо питань управління державним боргом в контексті забезпечення боргової та економічної безпеки країн. Методологія дослідження базується на використанні веб-інструменту Google Trends та відповідної шкали вимірювання популярності пошукових запитів Google Trends Scale. За допомогою лінійних діаграм Google Trends здійснено трендовий аналіз за ключовими словами «економічна безпека», «державний борг» та «стійкість боргу». Ключові параметри аналізу: 1) часовий період: з серпня 2019 року до серпня 2024 року; 2) географічні межі: Україна та весь світ, з особливим акцентом на країни ЄС. Стаття пропонує оцінити інтерес користувачів Інтернету за трьома рівнями за шкалою GT (низький (0-29 балів), середній (30-74 балів) та високий (75-100)).

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човими словами «економічна безпека», «управління державним боргом» та «боргова стійкість». Ключовими параметрами аналізу визначено: 1) часові рамки: з серпня 2019 року по серпень 2024 року; 2) географічні межі: Україна та Увесь світ, з особливим наголосом на країнах ЄС. У статті запропоновано здійснювати оцінку зацікавленості інтернет-користувачів в межах трьох рівнів за шкалою GT (низький (0-29 балів), середній (30-74 балів) та найвищий (75-100)). Трендовий аналіз за пошуковими запитами «управління державним боргом» та «боргова стійкість» продемонстрував нестійкий інтерес інтернет-користувачів: з різкими коливаннями від низького до середнього та найвищого рівня за шкалою GT. Відсутність даних по Україні (за пошуковими запитами «управління державним боргом» та «боргова стійкість»), свідчить про надзвичайно низький рівень цікавості український інтернет-користувачів до питань що стосуються державної боргової політики. Аналіз динаміки суспільного інтересу, по всьому світу, показав, що зацікавленість в пошуковому запиті «економічна безпека» значно вища, порівняно із запитами «управління державним боргом» та «боргова стійкість», що може бути обумовлено більшою зрозумілістю поняття «економічна безпека» для громадян та через його тісний зв'язок з термінами пов'язаними з добробутом населення (рівень життя, зайнятість, стабільність цін тощо). Виявлено спільні тенденції: виражене пікове зростання зацікавленості на початку пандемії Covid-19 та у лютому-квітні 2022 року (що, пов'язано з численними каскадними реакціями по всьому світу зумовленими повномасштабним вторгненням РФ на територію України). Спільні спади інтересу в грудні з року в рік – можуть бути пояснені «святковим сезоном», наприкінці року та зменшенням зацікавленості суспільства в пошуку економічної інформації. Результати дослідження демонструють критичну важливість вивчення питань управління державним боргом в контексті забезпечення економічної безпеки у їх взаємозв'язку для покращення превентивних заходів та стратегій економічного розвитку під час кризових ситуацій.

Ключові слова: державний борг, економічна безпека, управління боргом, трендовий аналіз, суспільний інтерес, економічна політика.

Statement of the problem. A significant level of public debt can lead to serious economic consequences, such as hyperinflation, a decrease in the country's investment attractiveness, an increase in the tax burden on households and businesses, a decline in the welfare of the population, devaluation of the national currency, and sometimes even a country's default. At the same time, it is not the level of the debt burden that is important, but an efficiently developed debt management system. In this regard, there is a growing need to create and implement effective mechanisms for public debt management that would reduce risks (even in the face of economic shocks) and ensure the country's economic security. The relevance of studying the dynamics of public interest in public debt management is also due to society's growing role in shaping public policy. Public interest in public debt management is growing, especially in the context of economic crises, which require greater transparency and accountability for governments. Thus, studying the dynamics of public interest in public debt management in the context of economic security is not only scientifically significant but also practically important. Such a study will provide an opportunity to better understand the challenges and risks faced by most countries and offer recommendations for improving the efficiency of public debt management in the context of ensuring the debt and economic security of the country.

Analysis of recent research and publications. The need to develop an effective public debt management system in the context of the growing global debt burden and economic instability has led to the emergence of a large number of scientific studies on this issue.

Existing studies by Bogdan T. [11], Baranovskyi O. [10], Kulinska A. [12], and Novoselova O. [13] cover various aspects of debt management: studying the economic essence of public debt, determining the optimal ratio of its internal and external components, studying the risks

associated with its servicing and repayment, developing optimal strategies for attracting and further efficient use of debt obligations.

Studies that analyze public debt play a significant role, as such studies help to understand how critical the debt burden is based on the existing economic, social, and political conditions Cochrane J. [2], Pulay G. [6].

In addition, studies that consider public debt not separately from the country's economic system but as its crucial component are critical Shkolnyk I., Koilo V. [8]. In this context, scholars tend to focus on the relationship between the level of public debt and key indicators of the country's economic development (GDP, exports, investments, etc.) K. Reinhart, K. Rogoff [7]. In these scientific works, the authors study how the growth of public debt can affect the country's economic stability, cause financial crises or lead to a loss of investor confidence due to insolvency.

The use of the web tool Google Trends to analyze the economic security of the country and its components was carried out in the work of A. Artyukhov, V. Barvinok, and S. Lyeonov [1]. The researchers confirmed the scientific nature of Google Trends results and proved that it can be fully used in scientific research.

In general, the study of the impact of public debt and measures to manage it on the country's economic security through the prism of public interest is an under-researched topic. As a rule, such studies are conducted either within the framework of sociological surveys (and they are limited by the number of people participating in the survey, geographical or time limits) or, accordingly, only certain social and economic indicators characterizing the standard of living are taken into account [9].

Despite a considerable amount of research on public debt management, certain aspects remain poorly understood, significantly how the interest of Internet users changes over time, whether there are pronounced trends

and, most importantly, whether there is a correlation between public debt management and economic security.

Formulation of the research task. The study aims to delve into the issue of public debt management in the context of ensuring the country's economic security by analyzing the dynamics of public interest based on the use of the analytical web tool Google Trends.

Summary of the main research material. In order to achieve this goal, the following algorithm of actions has been formed in this article:

1. Choosing an analytical tool for analysis: in this study, the analytical web tool Google Trends was chosen for a comprehensive analysis of the dynamics of public interest.

2. Definition of key terms: the following search queries were used: «economic security», «public debt management» and «debt sustainability».

3. Defining the geographical boundaries of the study: two geographical ranges were defined for the purposes of this article - the dynamics of public interest within Ukraine and the whole world, with a particular emphasis on the EU countries.

4. Determination of time frames: periods were determined taking into account key events (the war in Ukraine), due to the need to develop an effective public debt management system to ensure economic stability in a crisis. In particular, the period from August 2019 to August 2024 was chosen for the analysis.

5. Determination of common patterns and seasonal trends: the graphs obtained with the help of Google Trends were analyzed to identify common features in the trends, as well as the presence of seasonal fluctuations.

6. Determination of peak interest: special attention is paid to peak values, as such abnormal values, in the dynamics of public interest, may indicate the greatest risks and dangers, and may also help in predicting future events.

7. Formulation of conclusions: based on the analysis, conclusions were formulated, and the main trends and possible risk factors were identified. In the context of the conclusions, the main emphasis is placed on the study of the impact of the war in Ukraine on the change in the interest of Internet users in public debt management and sustainable economic development.

As mentioned earlier, the free web tool Google Trends was chosen to conduct the study. It makes it possible to analyze the dynamics of public interest, i.e., how often a particular search term (or terms) is entered by Internet users in the Google search engine within certain geographic and time ranges.

This analytical tool is used not only to track, understand, and analyze public interest on the Internet regarding economic issues but, in general, to track various topics (cultural, social, political, etc.).

In contrast to other search engines, as of the end of 2022, it was determined that Google Search accounted for about 87% of search traffic worldwide, this figure is evidence not only of the popularity of this search engine, but also of the fact that Google Trends data characterizes the dynamics of public interest of Internet users by about 87%. In addition, Google Trends can be an additional alternative source of analysis in global research to identify trends and changes in important economic, social and political issues, including the development of an effective public debt management system in the context of debt and economic security.

Note that the graphs generated by Google Trends do not show the number of search queries entered in the Google search engine over a certain period of time, but they do show a scale of interest, where the value varies from 0 (no interest) to 100 (peak interest).

In the framework of this study, it is proposed to use the following gradation of the values of interest of Internet users in the issues of public debt management in the context of ensuring economic and debt security:

- low (0-29 points);
- medium (30-74 points);
- highest (75-100 points).

Therefore, the initial stage of the study is to analyze the dynamics of public interest by the search term «economic security» within Ukraine (Figure 1a) and worldwide (Figure 1b).

Figure 1a) demonstrates an extremely low level of interest (almost zero) among Ukrainian Internet users in the issue of economic security during the analyzed period. However, it is worth noting that the graph clearly shows two peaks: March 2022 and August 2024. The surge in public interest in March 2024 is undoubtedly due to the full-scale invasion of Ukraine by Russia and the public's interest in the country's resilience in the crisis. The peak of interest in August 2024 was also primarily due to the military situation in the country.

Public interest in economic security around the world, shown in Figure 1b), demonstrates constant fluctuations in public interest in this issue, with the predominant fluctuation of interest within the average level (30-74 points). However, this graph also shows several peak periods, in particular March-April 2019 (related to the spread of the Covid-19 pandemic); February-April (related to cascading reactions around the world caused by the war in Ukraine), and February 2024 (which may be associated with the development of economic development plans at the beginning of the year by most countries and/or active discussions in the media and mass media on the need to contain the economic recession that has also befallen countries around the world).

A significant number of fluctuations in this graph can be explained by the introduction of new regulatory measures or other significant changes in economic policy, and the public's reaction to such changes.

Also, the graph shows slight seasonal fluctuations – a decrease in interest at the end of the year and its growth in February and March. Such fluctuations can be explained by the «holiday season» at the end of the year.

The analysis of the popularity of queries on the country's economic security by country, shown in Figure 2, shows that the Republic of the Philippines (100 points), Ethiopia (95), Zimbabwe (86) and the United States (58 points) are the most popular countries. So, this figure shows the level of public interest generalized across the country. The more intense the color, the higher the interest in the search query.

The high level of interest of Internet users in the search term «economic security» in these countries (regions) is due to economic instability, the need to develop effective measures to ensure economic stability, as well as factors such as hyperinflation, high unemployment, political conflicts, and unstable exchange rates. In the United States, a relatively high level of public interest in the search query «economic security», despite relative economic

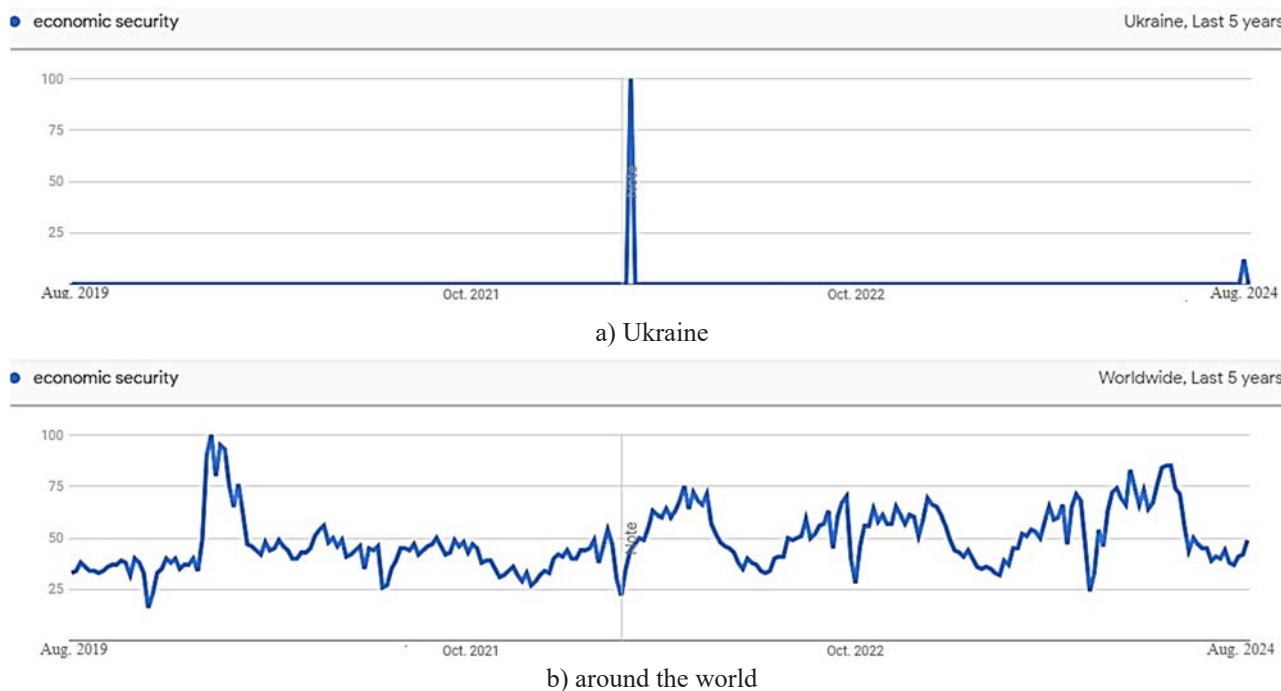


Figure 1. Dynamics of the search query “economic security”, from August 2019 to August 2024

Source: compiled using the Google Trends tool

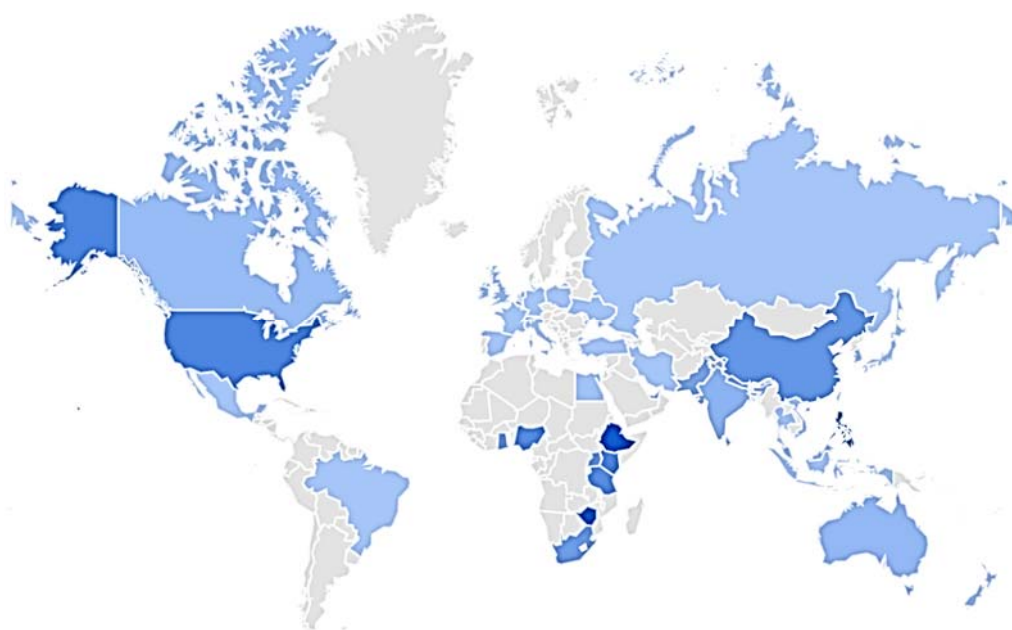


Figure 2. Geography of the popularity of the search query «economic security» by region, from August 2019 to August 2024

Source: compiled using the Google Trends tool

stability, is driven by the risks of economic destabilization, rising inflation, rising costs of living, and high levels of public debt.

Based on the data on the popularity of the query «economic security» by country, Ukraine has only 3 points on the GT scale out of 100, while most EU countries have less than 1 point, which, compared to other countries,

demonstrates an extremely low level of public interest in this issue.

At the same time, it is important to note that it is not enough to analyze the dynamics of public interest by only one search term to draw a full conclusion about the lack of public interest in the country's economic security (a full analysis requires analysis by several related terms,

economic sustainability, etc.) Therefore, this issue requires further research.

The next stage of the trend analysis, in accordance with the set goal, is to analyze the dynamics of interest of Internet users in the search query «public debt management» within Ukraine and around the world (Figure 3).

Although the issue of public debt management in Ukraine is extremely relevant and has become even more important since the beginning of the full-scale invasion of its territory by Russia (as external public debt has become one of the key sources of budget revenues), the trend analysis of public interest showed zero interest on the GT scale.

In contrast to the results obtained in Ukraine, the dynamics of the search query «public debt management», worldwide (Figure 3), for the analysed period from August 2019 to August 2024 in Google Trends, demonstrates a long and increased interest in this issue. However, it is necessary to emphasize that this interest is marked by constant sharp fluctuations, which may indicate that, firstly, society understands the importance of public debt management measures in the context of ensuring the social, economic and political stability of the country; secondly, people are aware of the interconnection of the economic and debt systems, and understand that the burden of paying off public debt ultimately falls on them. In addition, such surges may also be caused by political statements and government actions that increase media and public interest in public debt management.

However, it is necessary to note that constant sharp fluctuations in the dynamics of public interest, on the contrary, may be caused by the complexity or lack of transparency of information on public debt and debt management measures (society, reacting to certain news, tries to understand the situation under the influence of contradictory sources of information, which causes such sharp fluctuations in the dynamics). In addition, people often perceive certain economic phenomena and their consequences through the prism of their own well-being. That is, for example, when there is news of an increase in the level of public debt per citizen or a default due to a significant accumulation of public debt, this causes fears and, accordingly, increases the level of interest in this issue.

In general, the constant and increased interest (average and above average on the GT scale) in public debt management indicates the relevance of this issue and the need for transparent public debt management in the context of ensuring the debt and economic security of countries.

The peak values shown in Figure 3 are related to the increased public interest in changes in the volume and system of public debt management in the context of overcoming the consequences of the global Covid-19 pandemic, economic recession caused by geopolitical conflicts (including the war in Ukraine) during the analyzed period.

The trend analysis summarised by country for the search query «public debt management» (Figure 4) demonstrated that the greatest public interest in this topic is in Liberia (100 points on the GT scale), Zimbabwe (62), Nepal (45), and Zambia (40). This again indicates the importance of public debt issues in the context of overcoming economic crises. In addition, the high level of interest in these countries may be due to their economic vulnerability, significant increase in public debt against the background of an underdeveloped economic system and the dependence of citizens' welfare on the level of the country's debt burden, etc.

Compared to the previous geographic and trend analysis presented in Figure 2, it can be concluded that Zimbabwe is in the top five for both search queries, which indicates the extreme importance of public debt management issues in the context of ensuring the economic security of the state.

Also, in contrast to the previous trend and geographical analysis, this analysis demonstrated an extremely low level of interest of Ukrainian Internet users and users of EU countries in the issue of public debt management compared to other countries (close to 0 according to the GT scale).

In the context of this study, it is also important to conduct a trend analysis of the search term «debt sustainability». It is this term that is most often used in the media and academic literature along with the concepts of «economic security» and «public debt management».

The trend analysis of the dynamics of public interest in the search query «debt sustainability» is shown in Figure 5.

The dynamics of public interest shown in Figure 5 demonstrates similar trends (constant interest with sharp fluctuations from low to medium and high levels on the GT scale) as for the search term «public debt management». Also, similar to the previous analysis, there is a lack of data for Ukraine, which generally indicates an extremely low level of interest among Ukrainian Internet users in issues related to public debt.

The geographical trend analysis is similar to previous studies (Figure 2 and Figure 4), showing the highest level of interest in countries with weak economic systems).

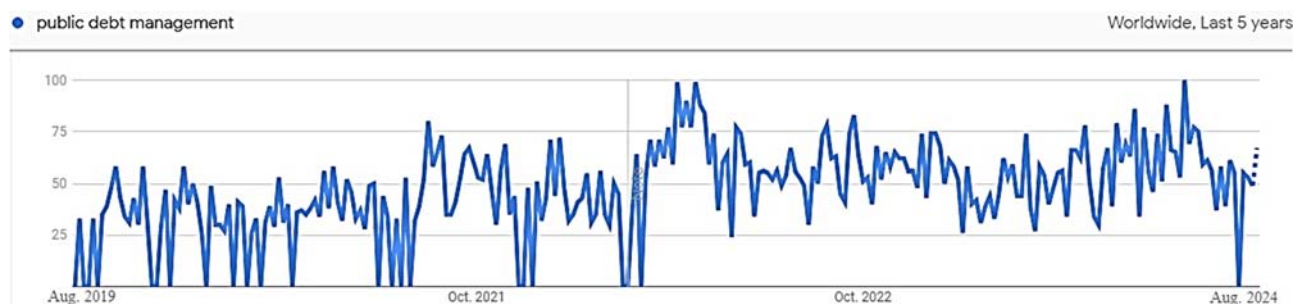


Figure 3. The dynamics of the search query «public debt management», worldwide, from August 2019 to August 2024

Source: compiled using the Google Trends tool

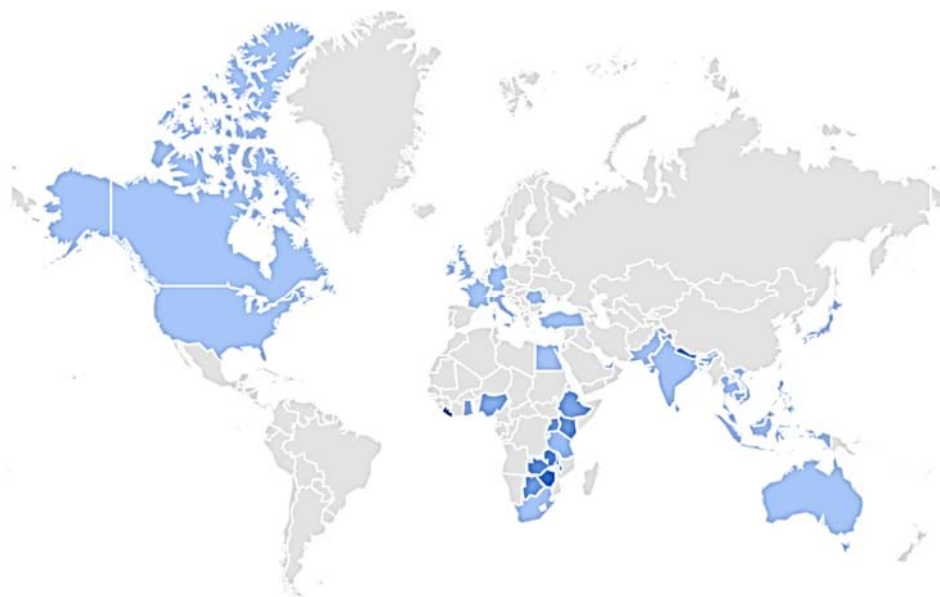


Figure 4. Geography of the popularity of the search query «public debt management» by region, from August 2019 to August 2024

Source: compiled using the Google Trends tool

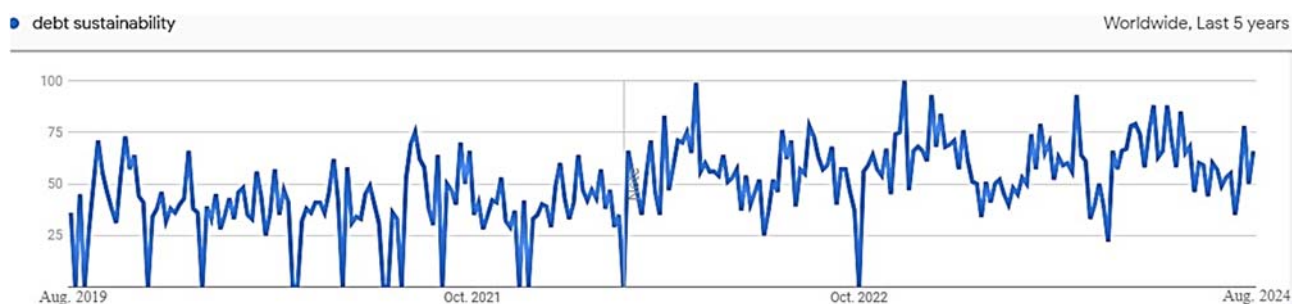


Figure 5. Dynamics of the search query «debt sustainability», globally, from August 2019 to August 2024

Source: compiled using the Google Trends tool

However, the key difference is that Luxembourg, an EU member state, is in the top five (44 points on the GT scale).

A comparative trend analysis of public debt management in the context of ensuring the economic and debt security of the country, conducted simultaneously by three search queries, is presented in Figure 6.

Figure 6 shows:

– that the interest in the term «economic security» among Internet users around the world is much higher than in the concepts of «public debt management» and «debt sustainability». This can generally be explained by several factors: the term economic security is more

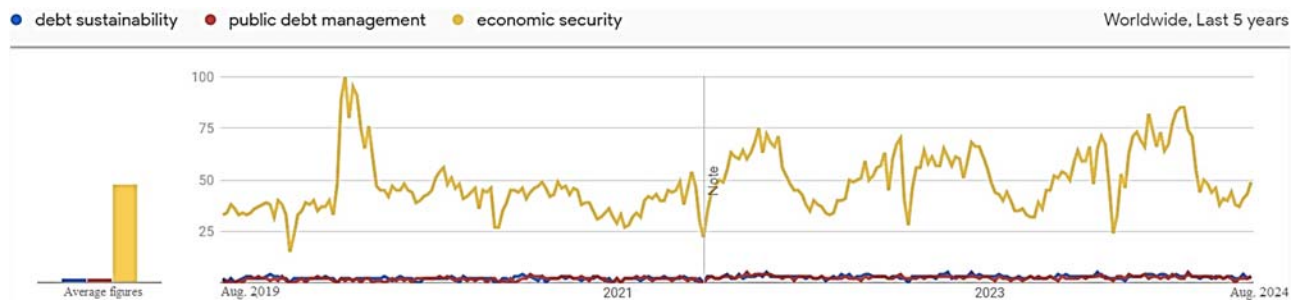


Figure 6. Dynamics of search queries for «economic security», «public debt management» and «debt sustainability» around the world, from August 2019 to August 2024

Source: compiled using the Google Trends tool

closely associated with terms related to the welfare of the population (living standards, employment, price stability, etc.). In addition, the term «economic security» is more often used in the media than concepts related to public debt;

- that the concepts of «public debt management» and «debt sustainability» show almost similar trends. The common trends are due to the fact that ensuring debt sustainability involves, first of all, the creation of an effective public debt management system;

- seasonal fluctuations present in the three graphs are due to the «holiday season» (at the end of the year, due to holidays (New Year, Christmas), the level of public interest decreases, and has a pronounced upward trend in February–March of the following year);

- all three graphs show a pronounced peak in interest at the beginning of the Covid-19 pandemic and in February–April 2022 (which can be attributed to the outbreak of war in Ukraine).

Thus, it can be concluded that it is necessary and important to study the trends of public interest in public debt management in the context of ensuring the economic security of countries.

Conclusions. The trend analysis of the search queries «economic security», «public debt management» and «debt sustainability» conducted in this article revealed common peaks of growth and decline, which indicates their close relationship. This relationship can be explained by global

events (the Covid-19 pandemic, military conflicts, etc.). The peak of public interest in the three search queries in March–April 2022 is associated with the beginning of Russia's full-scale invasion of Ukraine and the numerous cascading consequences of the war for most countries of the world.

The study of the selected search queries «public debt management» and «debt sustainability» in their interconnection is critically important, as they affect the economic security of the country and are its key components. After all, uncontrolled growth of public debt increases the risks of economic recession and default.

Prospects for further research may include:

- use of additional and related search queries for a more detailed analysis;

- studying the relationship between the role of education and public interest in public debt management in the context of economic security;

- analysis of the impact of changes in regulatory and legal measures on the level of public interest in public debt management;

- conducting trend analysis separately for the EU countries and Ukraine.

The following areas of research can be complementary to this trend analysis and contribute to a deeper understanding of the problem and the development of more effective strategies for public debt management in the context of economic security.

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