

## Determining Patterns of Interest in the Theme of State Regulation of Economic Risk in Small Enterprises Activity

Svitlana Achkasova\*, Chao Wu, Anzhelika Alfimova

Simon Kuznets Kharkiv National University of Economics  
61166, 9A Nauka Ave., Kharkiv, Ukraine

**Abstract.** In the course of the intensification of globalization and integration processes in the world economy, activities of small enterprises are becoming increasingly exposed to new economic risks. This accounts for the necessity to determine the level and dynamics of interest in the theme of economic risk as well as for the emerging need to improve the system of its state regulation. The purpose of the research is to model the processes of assessing the level of interest and making decisions to improve the mechanisms of state regulation of economic risk. The research methodology is based on the use of the method of Internet resources analysis, the method of forecasting, the method of exponential smoothing, the decision support system (hereinafter DSS) Decision Making Helper, etc. In determining the level of interest in the theme of economic risk and conducting an analysis of it, Google Trends web application tools were used based on search queries for the category “economic risk” in Ukrainian, Spanish, Chinese and English. Based on the obtained data, trend line models were constructed for the distribution diagrams of search queries for the concepts of “riesgo económico” and “economic risk”, which have a satisfactory value of approximation reliability and can be used for forecasting. At the same time, the trend models for analysing user interest trends in Ukraine are of low quality. With the use of the DSS Decision Making Helper, the assessment of alternative options for state regulation of economic risk in small enterprises activities was carried out. In particular, the priority of improving the taxation process as the most effective and relevant mechanism was determined. The practical significance of the research findings suggests that the developed proposals can be applied in assessing the level and dynamics of interest in the theme of economic risk as well as in making decisions on its state regulation

**Keywords:** small business, new economic threats, search query, user interest, economic risk management

Article's History: Received: 01.12.2021; Revised: 11.02.2022; Accepted: 16.03.2022

### ● INTRODUCTION

The intensification of structural transformations of national economies of all countries in the world as a result of enhanced globalization and integration processes necessitate increased attention to economic risk in activities of small enterprises. Comprehensive support for entrepreneurship leads towards improved provision of various goods and services to the population, increased employment rates, broader opportunities for self-realization, accelerated innovative development and solutions to socio-economic problems, including those caused by the spread of the COVID-19 pandemic. Small enterprises in many countries, including Ukraine, China, Kazakhstan, India and others, appear to be in the riskiest market area, consequently facing problems related to limited available resources, the growing need for financial support for enterprises, and increased competition. Therefore, the issues of identifying and analysing the most important causes and possible consequences of economic

risk in small enterprises activities as well as improving its state regulation, are gaining particular importance and relevance.

The issues of improving the processes of assessing the level of interest and the degree of spread of the theme of economic risk are also brought into view. Scientific works of many scholars are dedicated to studying the impact of new economic risks on small business activities as well as to searching for innovative solutions for their development in the context of global socio-economic changes.

In particular, B.I. Kosovich and V.O. Dmitruk [1] explore in their work the main modern globalization challenges and how they affect activities of small enterprises in terms of the risk for their development, and they also emphasize the importance of state support for the development of innovative entrepreneurship. In their scientific work, M.I. Karlin, O.V. Stashchuk and O.V. Borysyuk [2]

### Suggested Citation:

Achkasova, S., Wu, Ch., & Alfimova, A. (2022). Determining patterns of interest in the theme of state regulation of economic risk in small enterprises activity. *Development Management*, 21(1), 8-17.

\*Corresponding author

underline the need for a detailed and in-depth analysis of new economic threats in small business activity in the context of a systemic impact on its finances. Taking into consideration studies of foreign experiences, these scholars also recommend developing a relevant system of incentives for small enterprises, specifically as to their revenue taxation. In particular, N.E. Kovshun [3] outlines in her work certain advantages and disadvantages of modern market transformations, state regulation of entrepreneurship in China, and emphasizes that they should be taken into account in order to develop a strategy for the development of small enterprises in Ukraine. It is also worth noting research developments of Ukrainian economist N.M. Vnu-kova [4], which are based on the application of an innovative approach to the use of the automated decision support system (hereinafter DSS) Decision Making Helper to assess the level of intensifying the expansion of the access to means of financing the implementation of promising projects from small and medium-sized enterprises.

Foreign scholars A.J. Hibbert [5] and G. Gao [6] in their research activities pay considerable attention to the practical aspects of measuring and managing economic risks in the development of small enterprises. A.A. Bartik [7] and M. Belitski [8] investigate the effects of the spread of the COVID-19 pandemic on the financial performance of small business and suggest possible ways to overcome them.

However, despite the large number of scientific developments, there is insufficient attention paid to assessing the level of interest and demand for information on economic risk among users as well as to improving practical ways of state regulation of new economic risks.

The object of the present research is economic risk in activities of small enterprises. The capacity and effectiveness of state regulation of economic risk in small business activities depends on informational, methodological and other kinds of support, which are the basis for determining its level. For its part, assessing the degree of user interest in the theme of economic risk using Google Trends web application allows setting trends and current tendencies in its state regulation.

*The aim of the paper* is to provide recommendations for determining the patterns of interest in the theme of state regulation of economic risk in activities of small enterprises.

Given the aim, the research process seeks to achieve the following objectives:

- determine the level of interest of Internet users in information related to the concept of “economic risk” using Google Trends;
- use the DSS Decision Making Helper to make optimal decisions in state regulation of economic risk in activities of small enterprises.

## ● MATERIALS AND METHODS

*The research methodology is based on the use of general scientific and special methods*

To study the general trends in the level of user interest in the theme of economic risk, to assess the demand for this issue by the criteria of spread and relevance, the method of analysing Internet resources via tools of Google Trends public web application by Google was used. It is based on the Google search engine and shows how often a certain term is searched for relative to the total volume of queries in

different world regions and in different languages [9]. Google Trends is one of the most convenient traditional monitoring methods along with Google Alerts, Google Advanced Search, etc. [10].

In the initial stage of the research, Ukrainian, Chinese and English were chosen for the analysis of various stakeholders’ interest in finding information related to the concept of “economic risk”. In the next stages of the research, however, Spanish as the second most common world language was chosen instead of Chinese. All operations for forming a statistical base were carried out as of the beginning of 2022. In the study of the statistical data of users’ search queries on the analysed concept of “economic risk” obtained in Google Trends web application, the method of statistical analysis was used in order to establish patterns of interest in the theme of economic risk and to identify structural shifts. For consolidating specific single facts about the demand for information related to economic risk, the generalization method was used.

Accordingly, the graphical method made it possible to visualize the number of search queries for the category under study, while the forecasting method allowed to construct models of trend lines to forecast the level of user interest in the theme of economic risk. To construct the most reliable models, the R.G. Brown method of exponential smoothing was used [11], which gives the most accurate approximation to the initial dynamic series. The smoothing parameter was  $\alpha = 0.75$ , which is close to one, so for the forecast models the impact of the final values of the users’ search queries was primarily taken into account. The application of this method made it possible to create more qualitative and reliable trend lines with a satisfactory value of the coefficient of determination  $R^2$ .

The observation method was used for collecting information on new economic risks and reasons for their emergence while the deduction method was applied in the process of extrapolating the consequences of new economic risks for the performance of national economies of different countries on activities of small enterprises.

In order to choose the best alternative of state regulation and to reduce the degree of economic risk in small enterprises activities, the Decision Making Helper software product as a DSS was used. This program is accessible to Internet users and performs automated calculations using the expert ranking method to determine the weight coefficients of the selected criteria and alternatives as well as pairwise comparisons of expert judgments, thus significantly reducing the subjectivity of their opinions [4]. This approach allowed to obtain multiple result variations, among which the highest priority for state regulation of economic risk was chosen on the basis of such criteria as efficiency, relevance and affordability of implementation.

According to the terms of the DSS Decision Making Helper, determination of the importance level for each criterion and evaluation of alternatives is carried out through the requisite rating: from (-5) “maximum unimportant” to (+5) “maximum important”, 0 – neutral [4; 12].

## ● RESULTS AND DISCUSSION

*Assessment of the level of Internet users interest in the concept of “economic risk” using Google Trends web application*  
Small enterprises are the backbone for the development

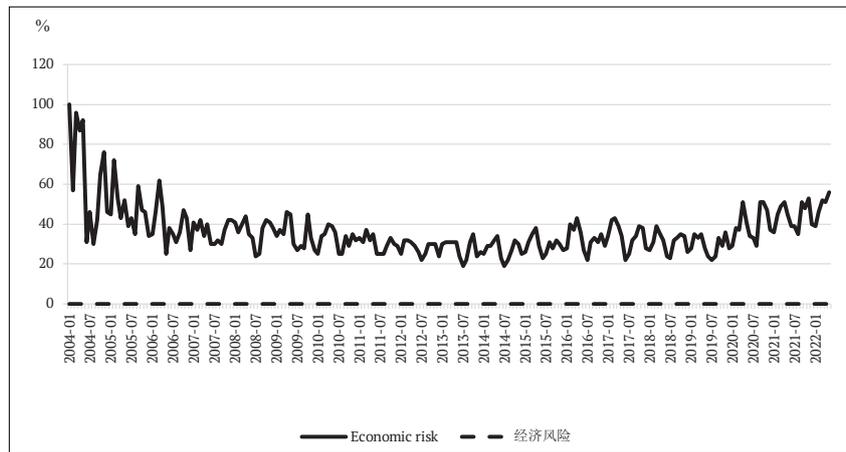
of modern economic systems of all countries in the world, accounting for quite a significant share in the total number of economic entities. They play a facilitating role in eliminating imbalances in individual commodity markets, creating additional jobs and reducing unemployment, ensuring social stability, activating innovative processes and developing competition. Furthermore, a developed small business sector provides a considerable share of revenues to budgets at all levels, sometimes constituting a greater share of gross domestic product than corporations, holding companies and other large enterprises.

However, it is worth noting that any business activity is associated with risk. It acts as a dueling two-factor element, characterized as an opportunity for development on the one hand and as a threat that requires finding solutions to avoid it on the other [1]. In all spheres of small business activity, the theme of economic risk is becoming increasingly important, and therefore the determination of the degree of spread and user interest in this issue can indicate its development and prospects for further research among scholars and practitioners.

Currently there is no unified approach to the definition of the concept of “economic risk”, which is due to

its multifaceted nature [5; 13]. According to the authors, a fairly complete and meaningful interpretation of this category is presented by Chinese scientist G. Gao, who views economic risk as “the probability of an enterprise losing part of its resources, lack of revenue or the incurrence of additional costs as a result of certain production and financial activities” [6]. At the same time, modern economists are increasingly moving away from the established conceptions of risk associated with traditional categories (loss, indefiniteness, uncertainty, etc.) in their definitions and introducing new terms into the interpretation, specifically paying attention to the peculiarities associated with globalization and digitalization in all spheres of activity. In particular, Ukrainian practitioners, V. Galasyuk and M. Soroka emphasize that “economic risk is a possible decrease in the value of positive conditional monetary prospective periods and a likely increase in the value of negative ones that occur as a result of an event undesirable for a particular actor of economic relations” [14].

Comparing the popularity dynamics of the term “economic risk” worldwide in Chinese and English via Google Trends tools revealed insufficient demand among users for information search in Chinese (Fig. 1).



**Figure 1.** Distribution diagram of search queries for the concepts of “economic risk” and “经济风险” worldwide since 2004

**Source:** retrieved from Google Trends by reference [15]

Let us analyse the interest of various users in studying information related to the category of “economic risk” in Ukrainian, Spanish and English by considering

their search queries by the first ten countries according to the data from 2004 onwards (Table 1).

**Table 1.** User search queries worldwide for the concepts of “economic risk” in Ukrainian, Spanish and English by country

Concept	“Economic risk”	“Riesgo económico”	“Economic risk”
Countries	Ukraine – 100	Colombia – 100	Ethiopia – 100
		Peru – 82	Republic of South Africa – 63
		Mexico – 58	Kenya – 55
			Philippines – 49
Countries	Ukraine – 100		Singapore – 35
			Nepal – 30
			Nigeria – 29
			Malaysia – 24
			Hong Kong – 23
			Sri Lanka – 18

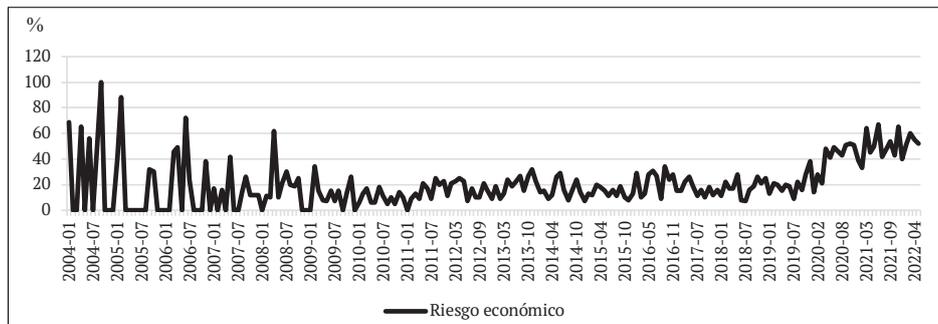
**Source:** retrieved from Google Trends by reference [15]

The data in Table 1 indicate that, taking into account the linguistic features of each country, the concept of “economic risk” is of 100% interest to users from Ukraine. At this stage, we should provide the distribution of their search queries, which is to be found further in the study.

The demand for information on the category “riesgo económico” in Spanish was revealed in the following countries: Colombia – 100%, Peru – 82% and Mexico – 58%. At the same time, the interest in the term “economic risk”

presented in English was most reflected in the user searches from the following countries: Ethiopia – 100%, South Africa – 63%, Kenya – 55%, Philippines – 49%, Singapore – 35%, Nepal – 30%, Nigeria – 29%, Malaysia – 24%, Hong Kong – 23% and Sri Lanka – 18%.

To obtain a greater visualisation of user searches worldwide by the terms “riesgo económico” and “economic risk”, distribution diagrams for each of the categories are presented in Figure 2 and 3, respectively.



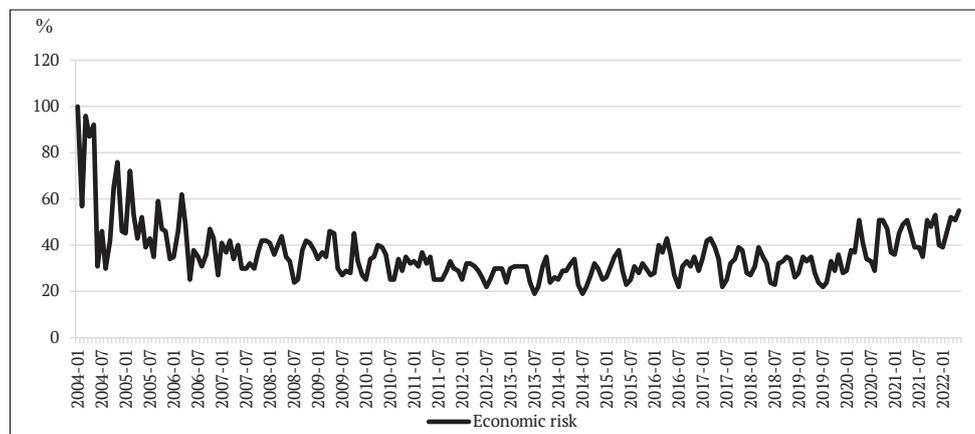
**Figure 2.** Distribution diagram of search queries for the concept of “riesgo económico” worldwide since 2004

**Source:** retrieved from Google Trends by reference [15]

By analysing the data in Figure 2, a distinctive tendency to a mostly consistent and steady increase in the interest in studying information related to the term “riesgo económico” can be noticed from the search queries of users from different countries. From January 2011 onwards, more and more searches for information related to this topic have been made each month, and the number of search queries has never reached a zero value. This has been caused by a

range of financial and economic crises, which have increased the need of users from the second group of countries for a more detailed analysis of the causes and potential consequences of economic risk.

The graph shows that a swift rise in the interest in the concept of “riesgo económico” occurred in April 2020, when the rapid spread of the COVID-19 pandemic began and the economic situation of many states was at risk.



**Figure 3.** Distribution diagram of search queries for the concept of “economic risk” worldwide since 2004

**Source:** retrieved from Google Trends by reference [15]

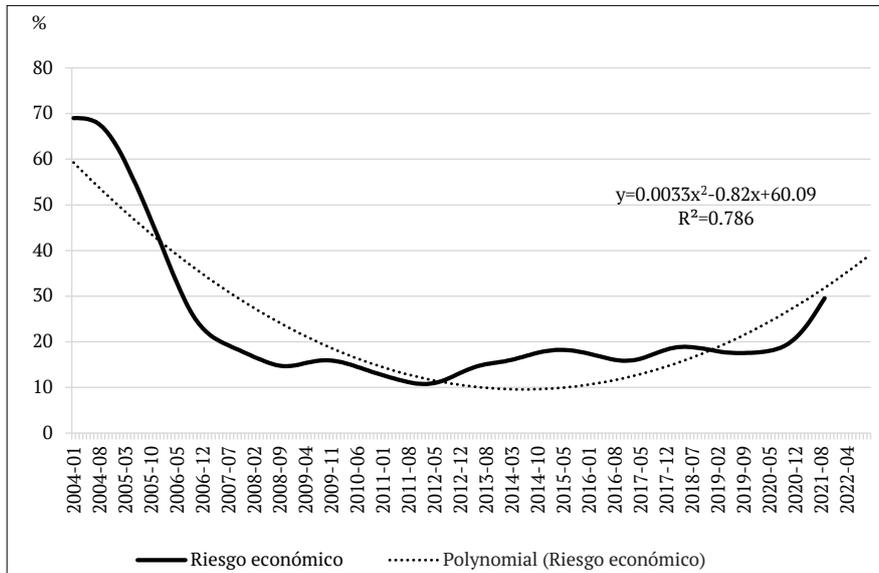
The graph presented in Figure 3 demonstrates a stable trend of search queries for the category of “economic risk” from June 2006 onwards. This may be due to the understanding of English-speaking users, notably scientists, practitioners, etc., of the relevance of economic risk issues in various areas of activity. According to Figure 2 as well, since April 2020 there has been an increase in the demand for studying economic risk issues in English, which may be explained by the spread of the coronavirus crisis. It should also be noted that from February 2022 onwards the interest

of users in searching for information on the category of “economic risk” has begun to grow rapidly due to the emergence of conflicts at the international level.

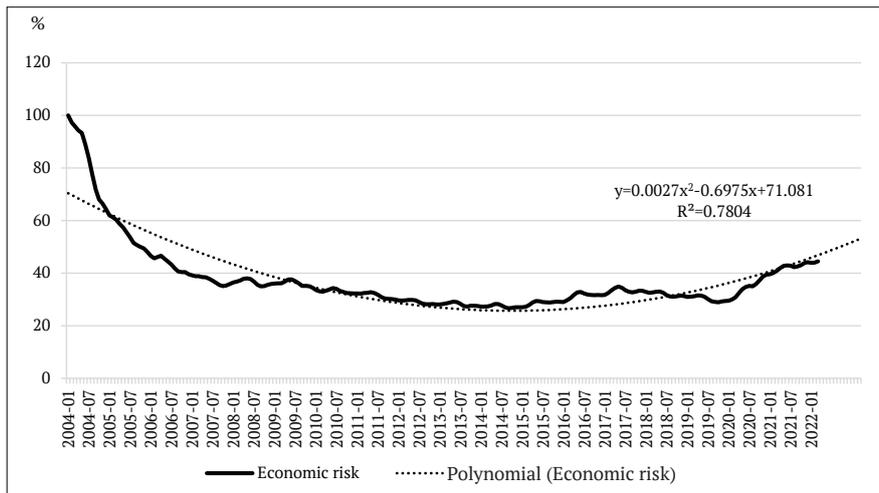
To establish trends and model the degree of Internet users’ interest in the terms under study, trend lines with a forecast for 12 months were added to the distribution diagrams. However, for both the concept of “riesgo económico” and the term “economic risk” the forecast models constructed from the data based on search queries since 2004 were of insufficient quality and had unsatisfactory values

of the reliability of approximation  $R^2$ , which were 0.2855 and 0.4846, respectively. This indicates the impossibility of

using them for forecasting. Figures 4-5 presents the design of more qualitative and reliable approximation functions.



**Figure 4.** Forecasting the degree of user interest in the concept of “riesgo económico” worldwide since 2004  
**Source:** retrieved from Google Trends by reference [15]



**Figure 5.** Forecasting the degree of user interest in the concept of “economic risk” worldwide since 2004  
**Source:** retrieved from Google Trends by reference [15]

By analysing the created trend lines for the concepts of “riesgo económico” and “economic risk” in Figures 4-5, it may be concluded that they are adequate and reliable, because the values of the coefficient of determination  $R^2$  exceed 0.75 and are 0.7860 and 0.7804, respectively. This indicates that the models obtained may be used for

forecasting the user demand for information related to the terms under study.

Table 2 shows the approximation functions derived from the constructed trend lines, confirming the significance of the results of forecasting user search queries for the analysed term worldwide in Spanish and English.

**Table 2.** Approximation functions for the studied categories based on the search queries data

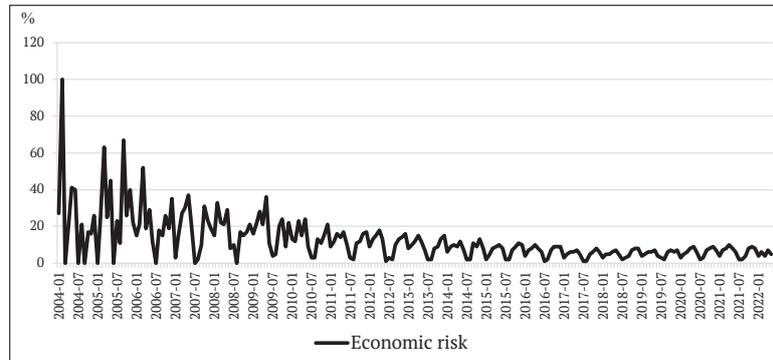
Concept	Approximation function	Approximation accuracy
“Riesgo económico”	$y=0.0033x^2-0.82x+60.09$	$R^2=0.7860$
“Economic risk”	$y=0.0027x^2-0.6975x+71.081$	$R^2=0.7804$

**Source:** retrieved from Google Trends by reference [15]

We created the trend line models for the studied concepts based on the data of user search queries worldwide in the Google information search engine using the method of exponential smoothing. As shown in Table 2, the models have a satisfactory value of the coefficient of determination  $R^2$ , that being 0.7860 for the category “riesgo económico” and 0.7804 for the term “economic risk”.

The results of the data analysis in Figures 4-5 and in Table 2 confirm the interest and strengthening of the role,

importance and relevance of research on economic risk worldwide. To determine the demand of stakeholders in Ukraine for information related to economic risk, the volume dynamics of search queries for the concepts of “economic risk” and “economic risk” from 2004 onwards was considered, and diagrams of their distribution in Google Trends web application were constructed (Figs. 6-7). The term “riesgo económico” is characterized by a low occurrence in search queries, so the interest in it among users in Ukraine was not assessed.

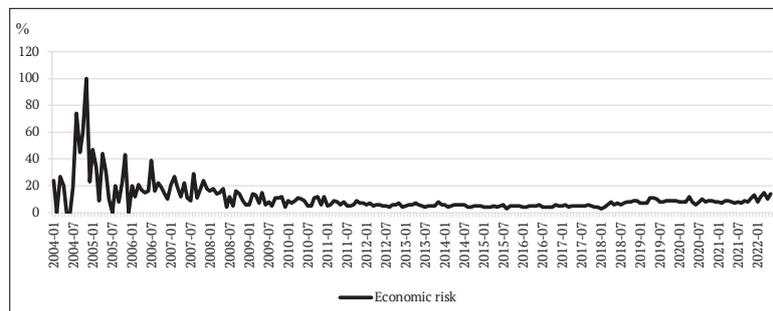


**Figure 6.** Distribution diagram of search queries for the concept of “economic risk” in Ukraine since 2004

**Source:** retrieved from Google Trends by reference [15]

The graph shown in Figure 6 defines a gradual reduction in search queries for the term “економічний ризик” (“economic risk” in Ukrainian) by July 2018, followed

by a slight growth and consistent monitoring of this concept. Additionally, it should be noted that there is a tendency towards gap reduction in the volume of search queries.



**Figure 7.** Distribution diagram of search queries for the concept of “economic risk” in Ukraine since 2004

**Source:** retrieved from Google Trends by reference [15]

On analysing the data in Figures 6-7, a general conclusion about the user interest in information about the concepts of “economic risk” and “economic risk” in Ukraine should be drawn, as there has been observed a sustainably low volume of search queries, especially since 2011. A slight increase is observed in 2018, which may be caused by globalization processes worldwide and their active impact. Moreover, it should be noted that the interest of Internet users in Ukraine in economic risk is associated with the economic and political situation in the country as well as with its aggravation due to the spread of the COVID-19 pandemic in early 2020 and the emergence of conflicts at the international level.

In order to make a forecast for each of the distribution diagrams presented in Figures 6-7, trend lines were added. Sixth-degree polynomial models were constructed to obtain a higher value of the reliability of approximation  $R^2$ , but even under such conditions they were of low quality for forecasting, and were inadequate.

Thus, the distribution shown in Figures 6-7 demonstrates a consistent decline in research in the field of economic risk with a slight increase since 2018, which may indicate a certain underestimation of the significance of a more thorough and detailed analysis of the causes, consequences and methods of managing economic risk in various sectors of activity.

*Using the DSS Decision Making Helper to make decisions in the field of state regulation of economic risk in small enterprises activity*

It should be noted that there is a global trend towards the increase in the level of user interest in economic risk issues, which is determined with language peculiarities taken into account. Economic risk always exists and is one of the most important elements of the performance of national economies in all countries worldwide, requiring economic entities to make managerial decisions with a structured approach. Accordingly, their task is to create new projects,

improve the quality of products, be able to sell them in international markets and promptly respond to global challenges caused by socio-economic changes, relying on the analysis of the impact of risk factors in the external and internal economic environment.

Modern globalization and integration processes are annually expanding their network of influence, shaping new challenges and requirements, which leads to the concern of entrepreneurs about the growing uncertainty and instability in the global business space. In the future the development of small enterprises will increasingly depend on considerations of new economic risks, among which the following kinds should be identified: climatic, epidemiological (primarily coronavirus), protectionist, populist, income inequality [2].

First of all, as most countries of the world entered an economic crisis in the first half of 2020, which was largely triggered by the quarantine due to the COVID-19 pandemic and the resulting suspension of activities of many small enterprises, especially in the areas of catering, entertainment, tourism, beauty industry and non-food retail, with many of them going bankrupt, the need to review traditional approaches to determining economic threats was brought onto the agenda [7; 8; 16]. At the same time, climate threats to human development are growing worldwide, which can force international organizations to strengthen control over activities of those enterprises that produce greenhouse gases, leading to a decrease in their work efficiency. The sharp drop in living standards in most countries in 2020 has significantly increased the influence of populist forces

on governments, which are forced to respond by increasing social benefits through an increase in external borrowing, which can objectively lead to rising inflation and depreciation of small enterprises' revenue [2]. Such actions of many politicians in power will not solve another urgent problem – inequality in wealth and quality of life, which is becoming exacerbated every year not only in relations between individual countries, but also within each of them [17]. We can therefore expect to see the imposition of the so-called wealth tax both in individual states and at the international level. This, in turn, will call into question the willingness of the owners and shareholders of many small enterprises to expand their production and create more job opportunities. The latter is the main condition for recovery from the crisis, which cannot be underestimated by politicians in power.

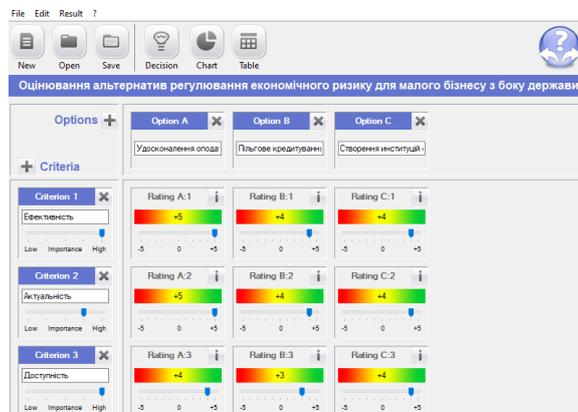
Therefore, the successful adaptation of small enterprises to modern realities of economic activity in the national and international markets requires effective mechanisms of state regulation of economic risk. Among them, we should highlight improvement of the process of taxation for small enterprises and simplification of the tax administration system, development of concessional lending programs for small enterprises involving the capabilities of state banks and their state guarantee, establishment of specialized state institutions for export-import operations insurance [3; 18; 19].

The results of determining the level of importance of the criteria in choosing the best of these alternatives as well as evaluating options for improving state regulation of economic risk are presented in Table 3.

**Table 3.** Determination of the level of importance of the criteria and evaluation of the alternatives of state regulation of economic risk in small enterprises activity by experts in the field of small business development

Criterion/Value	Alternative		
	Improvement of taxation	Concessional lending	Establishment of insurance institutions for export-import operations
Efficiency (+5)	+5	4	4
Relevance (+4)	+5	4	4
Affordability (+5)	4	+3	4

In reference to the data in Table 3, the information was entered into the DSS Decision Making Helper (Fig. 8).

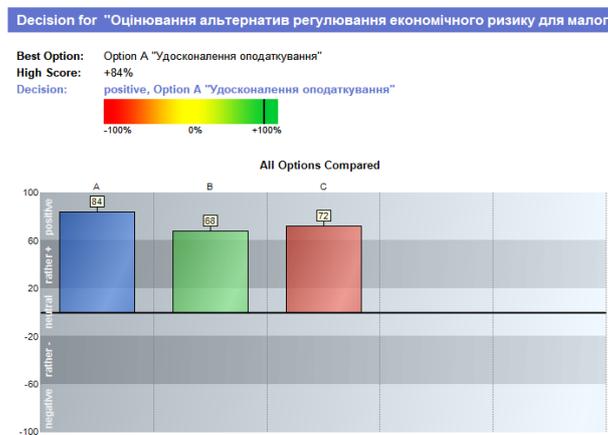


**Figure 8.** The DSS Decision Making Helper dialogue box with the evaluation of the alternatives of state regulation of economic risk in small enterprises activity

Source: retrieved from Decision Making Helper by reference [12]

Based on the data presented in Figure 8, the DSS Decision Making Helper produced the final results for deciding on the choice of the most preferred way to manage economic risk (Figs. 9-10) It should be noted that this software product

automatically calculates the value of the solution for each regulatory mechanism in percentages from (-100%) to (+100%) and on the scale: “unsatisfactory/quite unsatisfactory/neutral/quite positive/positive” [4; 20].



**Figure 9.** The DSS Decision Making Helper dialogue box with the results for the alternatives of state regulation of economic risk in small enterprises activity

**Source:** retrieved from Decision Making Helper by reference [12]



**Figure 10.** The Decision Making Helper dialogue box with the results for the alternatives of state regulation of economic risk in small enterprises activity (radar method)

**Source:** retrieved from Decision Making Helper by reference [12]

It can be concluded from the analysis of the obtained results in Figures 9-10 that the most appropriate alternative that would facilitate economic risk regulation and reduction of its effects on small enterprises activity is improvement of the taxation process and simplification of the tax administration system. This mechanism, compared to others, is the most effective and relevant under present conditions.

This is especially important as due to crisis developments in the Ukrainian economy there has been a decline in the production sector. Due to the increase in competition in the domestic and global markets, individual enterprises do not have sufficient development rates [20].

In particular, one of the main directions of improving the taxation process is the performance by tax authorities of the servicing function instead of the supervisory and punitive ones. Its essence is to support charge and payment of taxes rather than filling the budget by whatever means. Other main methods are reducing the number of taxes,

their rates and simplifying the procedure for their calculation and payment, digitalization of services for small enterprises, improving tax administration, creating a system of tax control due to the degree of risk in enterprises activities etc. [21].

Thus, the novelty is the improvement of the process of assessing the level of interest and the degree of spread of economic risk topics via Google Trends search engine tools, and the upgrade of the decision-making process as to the choice of mechanisms of state regulation of new economic risks using the DSS Decision Making Helper.

The practical significance of the research findings lies in the fact that the developed proposals can be used in assessing the relevance of information related to economic risk among Internet users and in state regulation of new economic risks in small enterprises activity in order to improve their performance under the present conditions of socio-economic changes.

## ● CONCLUSIONS

Therefore, the successful performance of small business both in the global business space and in Ukraine in the future will significantly depend on the consideration of new economic risks. By conducting a detailed analysis of user interest in searching for information on the concept of “economic risk” in Ukrainian, Spanish and English on the basis of user search queries since 2004, it can be concluded that the role and relevance of this research area has increased. In particular, the constructed trend line models for the distribution diagrams of search queries for the categories “riesgo económico” and “economic risk” have a satisfactory value of approximation reliability (0.7860 and 0.7804) and can be used for forecasting the level of interest among Internet users. As for the constructed trend models based on search queries in Ukraine, they are of low quality and are not recommended for forecasting. The resulting distribution is somewhat contradictory, as it demonstrates a gradual decline in the demand for information on economic

risk with a slight increase since 2018. Such dynamics may be associated with the impact of globalization and integration processes as well as with the economic and political situation in Ukraine, which has been exacerbated by the spread of the COVID-19 pandemic at the global level in early 2020 and the emergence of conflicts at the international level at the end of February 2022.

Alternatives of state regulation of economic risk were evaluated with the DSS Decision Making Helper and it was determined that the improvement of the taxation process and simplification of the tax administration system is the most optimal alternative. This mechanism, compared to others, is the most effective and relevant under the present conditions of small enterprises activity. Thus, it should be emphasized that the successful adaptation of small enterprises to the current realities of economic activity in the national and international markets requires effective mechanisms of state regulation of economic risk and its assessment, which presents the subject of further research.

## ● REFERENCES

- [1] Kosovich, B.I., & Dmitruk, V.O. (2020). Risks of development of small business in modern conditions of globalization. *Ekonomika ta Derzhava*, 5, 88-92.
- [2] Karlin, M.I., Stashchuk, O.V., & Borysyuk, O.V. (2021). Financial aspects of taking into account new economic risks in the activity of enterprises. *Financial and Credit Activity: Problems of Theory and Practice*, 4(39), 376-386.
- [3] Kovshun, N.E. (2019). The formation of small and medium-sized businesses in the transformational period: The experience of Ukraine and China. *Ukrainian Applied Economy Journal*, 1(4), 151-158.
- [4] Vnukova, N.M. (2020). Intensify the expansion of access to the means of financing the implementation of innovative projects of small and medium-sized enterprises. *Law and Innovation*, 2(30), 17-23.
- [5] Hibbert, A.J., & Turnbull, C.J. (2020). Measuring and managing the economic risks and costs of with-profits business. *British Actuarial Journal*, 9(4), 725-777.
- [6] Gao, G. (2021). How to prevent and control the economic risks in the business development of enterprises. *Guide to Public Investment*, 7(13), 438-446.
- [7] Bartik, A., Bertrand, M., Cullen, Z., Glaeser, E., Luca, M., & Stanton, C. (2020). The impact of COVID-19 on small business outcomes and expectations. *Proceedings of the National Academy of Sciences of the United States of America*, 117(30), 17656-17666.
- [8] Belitski, M., Guenther, C., Kritikos, A., & Thurik, R. (2022). Economic effects of the COVID-19 pandemic on entrepreneurship and small businesses. *Small Business Economics*, 58, 593-609.
- [9] Kliuiev, O., Vnukova, N., Hlibko, S., Brynza, N., & Davydenko, V. (2022). Estimation of the level of interest and modeling of the topic of innovation search in Google. *Computational Linguistics and Intelligent Systems*, 1, 1-13.
- [10] Achkasova, S. (2020). Using the decision-making technology in organization of compliance in the sphere of accumulated pension provision. *Technology Audit and Production Reserves*, 5/4(55), 29-37.
- [11] Turbal, Yu.V., & Kinda, V.V. (2020). Analysis of the pyramidal method of extrapolation and models of exponential smoothing for short-term forecasting. *Bulletin of the National University of Water Management and Environmental Management*, 4(92), 165-171.
- [12] Decision making helper. (2022). Retrieved from <https://www.infonautics-software.ch/decisionMakingHelper/>.
- [13] Kuzmin, O., & Glibchuk, V. (2019). The evolution of views on risk in economic science. *The Herald of Ternopil National Economic University*, 4, 92-101.
- [14] Galasyuk, V., & Soroka, M. (2020). The concept of economic risk in the context of the CCF concept. *The Securities Market of Ukraine*, 5-6, 56-65.
- [15] Google trends. (2022). Retrieved from <https://trends.google.com.ua/trends/?geo=UA>.
- [16] Noy, I., Doan, N., Ferrarini, B., & Park, D. (2020). Measuring the economic risk of COVID-19. *Global Policy*, 11(4), 413-423.
- [17] Kolodiziev, O., Rohov, H., Prykhodko, S., Sybirtsev, V., & Krupka, I. (2021). Factors of national environmental performance in sustainability management aspect. *Problems and Perspectives in Management*, 19(3), 69-84.
- [18] Coglianese, C. (2020). The law and economics of risk regulation. *Penn Law: Legal Scholarship Repository*, 32(12), 56-83.
- [19] Shapiro, S., & Borie-Holtz, D. (2020). Small business response to regulation: Incorporation a behavioral perspective. *Humanities and Social Sciences Communications*, 41(58), 26-35.
- [20] Kolodizev, O.M. (2019). Development of accounting and information support of banking innovations under the influence of digital transformation of financial and industrial groups. *Ukrainian Applied Economy Journal*, 4(4), 250-256.
- [21] Mintz, A. (2021). A new approach to improving small business tax competitiveness. *The School of Public Policy Publications*, 14(1), 1-45.

## Визначення закономірностей щодо зацікавленості тематикою державного регулювання економічного ризику діяльності малих підприємств

Світлана Анатоліївна Ачкасова, Чао У, Анжеліка Сергіївна Алфімова

Харківський національний економічний університет імені Семена Кузнеця  
61166, просп. Науки, 9А, м. Харків, Україна

**Анотація.** Під час посилення глобалізаційних та інтеграційних процесів у світовій економіці діяльність малих підприємств все більше зазнає впливу нових економічних ризиків. Це зумовлює необхідність у визначенні рівня та динаміки зацікавленості тематикою економічного ризику, а також виникає потреба в удосконаленні системи його державного регулювання. Метою дослідження є моделювання процесів оцінювання рівня зацікавленості та прийняття рішень щодо покращення механізмів державного регулювання економічного ризику. Методика проведення дослідження базується на використанні методу аналізу Інтернет-ресурсів, методу прогнозування, методу експоненційного згладжування, системи підтримки прийняття рішень (далі – СППР) Decision Making Helper тощо. У процесі визначення рівня та проведення аналізу зацікавленості тематикою економічного ризику застосовувалися інструменти веб-додатку Google Trends на основі пошукових запитів категорії «економічний ризик» українською, іспанською, китайською та англійською мовами. За отриманими даними побудовано моделі лінії трендів для діаграм розподілу пошукових запитів за поняттями «riesgo económico» та «economic risk», які мають задовільну величину достовірності апроксимації та можуть бути використані для прогнозу. Водночас побудовані трендові моделі для аналізу тенденцій зацікавленості користувачів в Україні мають низьку якість. Проведено, із застосуванням СППР Decision Making Helper, оцінювання альтернативних варіантів державного регулювання економічного ризику діяльності малих підприємств. Зокрема, визначено пріоритетність удосконалення процесу оподаткування як найбільш ефективного та актуального механізму. Практична значимість результатів дослідження полягає в тому, що розроблені пропозиції можуть застосовуватися у процесі оцінки рівня та динаміки зацікавленості тематикою економічного ризику, а також під час прийняття рішень щодо його державного регулювання

**Ключові слова:** малий бізнес, нові економічні загрози, пошуковий запит, зацікавленість користувачів, управління економічним ризиком