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STRATEGIC MANAGEMENT UNDER UNCERTAINTY: IMPLEMENTATION RISKS OF INTERNATIONAL INVESTMENT PROJECTS

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СТРАТЕГІЧНЕ УПРАВЛІННЯ В УМОВАХ НЕВИЗНАЧЕНОСТІ: РИЗИКИ РЕАЛІЗАЦІЇ МІЖНАРОДНИХ ІНВЕСТИЦІЙНИХ ПРОЄКТІВ

The purpose of the article is to define the economic category "uncertainty" and establish the transmission channels of the influence of economic uncertainty on the quality of strategic management and international business as such. Modern management is undergoing significant changes, which can be understood through the analysis of conditions of uncertainty. The main reason for the manifestation of uncertainty is the relationship between the system and chaotic regimes and the attitude of managers to the points of choice and decision-making (bifurcation points), which in classical management theories was considered as a process with given parameters, characterized by certainty and predictability. The synergetic approach, on the contrary, allows us to analyze management as a complex system based on a person, his motivational schemes and processes, and various types of organizational cultures. In conditions of uncertainty, effective management requires formation of a risk culture. Risks are individual actions taken in a situation of uncertainty with the hope of a favorable outcome of events, of winning. To a greater extent, risk culture manifests itself in the processes of managing modern changes. Changes are becoming an integral part of modern management. Attention is paid mostly to the individual, her interests, value bases, and target vector. Order is transformed into short periods of system stabilization between long periods of transformational change. Dynamic chaos, containing emerging structures of a new order, begins to attract special attention. Flexible management modes are emerging and rapidly developing based on self-organization processes (processes that change without dominant outside influence). One of these modes is the design control mode. The high pace of ongoing changes also increases uncertainty, since they provoke changes in the target vector, management decisions, and adjustments to the problem situation, which must be transferred from unstructured to structured status in record time. High rates of change cause numerous stressful situations for both subjects and objects of management, which can lead to erroneous decisions and actions. High rates of change are an objective characteristic of uncertainty, so adaptation seems to be one of the effective management strategies. It serves as the basis for evolutionary management in conditions of uncertainty. The high pace of modern changes covers all management levels: from intrapersonal (the level of the subject and object of management) to the global, when the subjects and objects of management are represented by

organizations or various associations of organizations (unions, agglomerations, associations, etc.). Between these levels are the interpersonal, organizational, inter-organizational, state and interstate levels. The next important characteristic of uncertainty is the focus of managers on the present. The future horizon turns out to be closed for forecasting and planning, as well as for subsequent monitoring of achieved results or implemented plans. The experience of the past is ineffective in the unfolding events of the present, since each management situation becomes unique for management influence. This significantly complicates the management process, since each situation is considered new. The occurrence of force majeure circumstances can lead to high uncertainty in the internal and external management of the organization. Attempts to draw on the experience of past situations that seem similar do not lead to the desired results. At the same time, the manager finds himself deprived of time to make the necessary decisions due to the high pace of changes taking place. Uncertainty can also affect the effectiveness of economic policy and can imply changes in the composition of the optimal mix of strategies. For example, a reduction in the elasticity of investment to changes in business conditions, such as the level of interest rates, during periods of heightened uncertainty would require a more substantial reduction in interest rates to achieve the same effect on investment as in normal times.

Мета статті полягає у визначенні економічної категорії "невизначеність" та встановленні трансмісійних каналів впливу економічної невизначеності на якість стратегічного управління та міжнародний бізнес як такий. Встановлено, що зростання невизначеності (у вигляді розпорошеності корпоративних очікувань всередині сектора) негативно впливає на інвестиційні проекти з низькою незворотністю лише в поєднанні з несприятливою ситуацією з фінансуванням. Для цієї категорії компанії з майже необмеженими можливостями фінансування не демонструють істотних змін щодо запланованої інвестиційної діяльності. Однак для проектів з високою незворотністю інвестування ефект невизначеності є негативним, незалежно від варіантів фінансування компаній. Таким чином, результати надають емпіричні докази того факту, що, по-перше, канал фінансування в першу чергу впливає на підприємства, які вже перебувають у скрутному фінансовому становищі, і, по-друге, що цей ефект проявляється через меншу кількість безповоротних інвестицій. Стратегічні заощадження є поширеним каналом, через який невизначеність впливає на економіку, і визначаються як "додаткові заощадження, викликані випадковим, а не визначеним майбутнім доходом". Багато економістів задокументували, що посилення невизначеності під час Великої рецесії супроводжувалося різким зростанням рівня заощаджень, що свідчить про те, що невизначеність може впливати на рішення домогосподарств щодо споживання. Невизначеність справляє негативний вплив на економічну активність та міжнародний бізнес через підвищення премії за ризик. Невизначеність також може призвести до зростання вартості боргового фінансування: банки, швидше за все, стягуватимуть вищі процентні ставки, оскільки невизначеність підвищує ймовірність дефолту. В обох випадках вища вартість фінансування негативно вплине на економіку через вплив на інвестиції та споживання. Невизначеність також може вплинути на ефективність економічної політики та може означати зміни у складі оптимальної комбінації стратегій. Наприклад, зниження еластичності інвестицій до змін умов ведення бізнесу, таких як рівень процентних ставок, у періоди підвищеної невизначеності вимагатиме більш істотного зниження процентних ставок, щоб досягти того самого впливу на інвестиції, що й у звичайний час.

Key words: uncertainty, risk, risk management, strategic management, international business, economic growth, economic activity, macroeconomic environment, transmission channels, economic policy, finance, investment, forecasting, international project.

Ключові слова: невизначеність, ризик, ризик-менеджмент, стратегічне управління, міжнародний бізнес, економічне зростання, економічна активність, макроекономічне середовище, трансмісійні канали, економічна політика, фінанси, інвестиції, прогнозування, міжнародний проєкт.

GENERAL STATEMENT OF THE PROBLEM AND ITS CONNECTION WITH IMPORTANT SCIENTIFIC OR PRACTICAL TASKS

Modern management is undergoing significant changes, which can be understood through the analysis of conditions of uncertainty. The main reason for the

manifestation of uncertainty is the relationship between the system and chaotic regimes and the attitude of managers to the points of choice and decision-making (bifurcation points), which in classical management theories was considered as a process with given parameters, characterized by certainty and predictability.

The synergetic approach, on the contrary, allows us to analyze management as a complex system based on a person, his motivational schemes and processes, and various types of organizational cultures. In conditions of uncertainty, effective management requires formation of a risk culture. Risks are individual actions taken in a situation of uncertainty with the hope of a favorable outcome of events, of winning. To a greater extent, risk culture manifests itself in the processes of managing modern changes. Changes are becoming an integral part of modern management. Attention is paid mostly to the individual, her interests, value bases, and target vector. Order is transformed into short periods of system stabilization between long periods of transformational change. Dynamic chaos, containing emerging structures of a new order, begins to attract special attention.

ANALYSIS OF RECENT STUDIES AND PUBLICATIONS

Overall, the theoretical and empirical literature finds an adverse effect of uncertainty on short-term growth prospects. Some uncertainty always exists in the economy because no one can accurately estimate the current economic situation or what will happen in the future. However, the impact of uncertainty is less clear in general equilibrium models and, under certain circumstances, high uncertainty can also have positive medium- and long-term effects on the economy. F. Knight understands uncertainty as such as "an insufficient level of understanding of the situation and the need to make decisions based not on one's own judgments about it, but on clear data [1]. In the same way, he differentiates the terms "risk" and "uncertainty" — according to his interpretation, "risk" is understood as a state under which such a distribution of probability of results can be achieved, while uncertainty implies that such a distribution of probabilities does not exist. However, later the concept of uncertainty began to be equated with risk according to F. Knight, while the concept of "risk" began to be mentioned more and more often in the context of understanding "ambiguity" [2]. According to the definition of G. Dosi and M. Egidi [3], substantive uncertainty results from "the absence of all the information necessary to make decisions with certain outcomes" and is contrasted with procedural uncertainty, which arises from "limitations in the computational and cognitive capabilities of actors to uniquely achieve their goals given the available information." As defined D. Dequech [4], strong uncertainty, in contrast to weak uncertainty, is characterized by the absence of unique, additive, and completely reliable probability distributions used explicitly or implicitly by individuals (the unique distribution is the only admissible one and has only a probability point, not certain intervals, while the additive distribution has probabilities that add up to unity or 100%). V. Karp [5], V. Panchenko [6], N. Reznikova [7—10], L. Tarasenko [11—12], N. Ushenko [13] the authors investigated the impact of challenges and uncertainties on the economic situation and macroeconomic environment. They established the importance of strategic foresight as an effective tool for strategic change management and improving the effectiveness of management decisions.

FORMULATION OF THE OBJECTIVES OF THE ARTICLE (TASK STATEMENT)

The purpose of the article is to define the economic category "uncertainty" and establish the transmission channels of the influence of economic uncertainty on the quality of strategic management and international business as such.

SUMMARY OF THE MAIN RESEARCH MATERIAL

An important role in forecasting is played by the feedback between prediction and decision. Its intensity varies for different objects of study. Theoretically, it is nowhere equal to zero: in the long term, a person will be able to change through decisions and actions an ever wider range of objects of prediction. But practically many objects, especially in the natural sciences, are uncontrollable and allow only unconditional prediction in order to adapt actions to the expected state of the object. On the other hand, often, especially in the social sciences, feedback reaches a high degree of intensity and leads to the so-called effect. self-fulfillment or "self-destruction" of the forecast through decisions and actions taking into account the latter. Hence the methodological orientation of forecasting controllable (mostly social) phenomena not towards unconditional prediction, but towards assessing the probable (subject to the preservation of the observed trends) and desirable (subject to predetermined norms) state of the object. The expected result of the study is the use of predictive information obtained from a comparison of search and normative forecasting data to improve the validity of goals and decisions, including plans, programs, and projects. Strong uncertainty can be substantive or procedural [3]. If it is substantive, strong uncertainty can also be divided into two subcategories: ambiguity and fundamental uncertainty. Ambiguity, in the terms used by C. Camerer and M. Weber, is "uncertainty about probability arising from the absence of information that is relevant and knowable" [14]. This definition can be refined by noting that, even if a decision maker under ambiguity cannot state with complete certainty the probability that a particular event will occur, that person is assumed to usually unconsciously know all possible events. Even if it is not fully known, the list of all possible events is already determined in advance (*ex ante*). In conditions of uncertainty, each market subject has practically no information about the preferences of other subjects, or their expectations. However, the market itself generally accumulates this information and is able to generate the right decisions and independently control the economic system [2]. Fundamental uncertainty, on the contrary, is characterized by the presence of creative freedom in shaping the future and the existence of uncertain structural changes. The list of possible events is not predetermined (*ex ante*), because the future has not yet been formed.

Neoclassical economics generally accepted the concept of weak uncertainty in any of its varieties. Indeed, this concept can be considered as one of the defining characteristics of neoclassical economics. Weak uncertainty according to neoclassicism can be divided into two categories: Knight's risk (objective probabilities known in advance) and Savage uncertainty (subjective

probabilities that can be combined with objective probabilities).

In addition, the latest typology of the concept of economic uncertainty, developed by H. Müller and N. Hornig, deserves special attention [15]. According to it, economic uncertainty can manifest itself in the following types: market uncertainty, economic policy uncertainty and completely exogenous economic uncertainty. Market uncertainty encompasses events such as sudden changes in market sentiment, the bursting of bubbles, or the spread of pessimistic expectations. The sources of this type of uncertainty are in the market itself but cannot be predicted due to the limitations of economic models and data availability.

Economic policy uncertainty refers to unforeseen policy developments that may have economic consequences. Unexpected election results (e.g. the UK Brexit referendum, the election of Donald Trump as US president) fall under this category, as do the implementation of specific policy instruments and their specific consequences (e.g. the introduction of tariffs, new central bank tools such as quantitative easing improvement or the recent price war on world oil markets).

Completely exogenous economic uncertainty comes from factors that are outside both the market and the political system. The possible sources of this type of uncertainty are numerous: uncertainty about the development of technological standards (e.g., automotive engine technology), technological failures (e.g., the 2011 Fukushima nuclear reactor accident), earthquakes, volcanic eruptions, pandemics (such as COVID-19), falling meteorites, catastrophic weather events (for example, major floods, hurricanes, droughts).

However, these three sub-types of uncertainty should not be seen as mutually exclusive, but as interrelated: when a certain exogenous shock occurs, unanticipated policy responses can lead to adverse market reactions. Quite often, these three categories can interact as a reverse cascade of uncertainty affecting the economy through different transmission channels. A clear example of this was the COVID-19 pandemic: completely exogenous economic uncertainty arose from the new virus and its initially unknown infectious properties, which prompted the authorities and central banks to act according to an unspecified scenario with uncertain consequences (economic policy uncertainty) that, in turn, significantly affected economic sentiment, potentially leading to the bursting of bubbles and other factors that characterize market uncertainty. Uncertainty can affect economic activity by being transmitted through various transmission channels. In theory, increased uncertainty can affect economic activity on both the supply and demand sides. By analyzing the relevant economic literature, three key transmission channels can be identified [16].

The first and most well-known framework for studying how fluctuations in uncertainty affect the economy is irreversible investment, which was highlighted in B. Bernanke's seminal writings [17]. The main expectation channel is based on the hypothesis that businesses and private households respond to uncertain times by modeling a strategy of restrained behavior. The idea is that when investment projects are irreversible, that is, they cannot

be "cancelled" or "changed" without a very large cost, investors face a trade-off between the additional returns of immediately starting the investment project and the benefits of waiting to gather additional information in the future. For companies, this could mean postponing capital spending and hiring, and for private households, it could mean buying fewer goods and services.

The value of anticipation is described in the literature as the value of real choice. Sometimes it is better to postpone new investment projects, and sometimes it will be more expedient to start implementing them right away. In such an environment, rising economic uncertainty will clearly tip the scales in favor of a wait-and-see behavior pattern among investors. Indeed, by suspending their investment plans, investors will have more information about the future, and therefore a better understanding of the long-term profitability of the project, ultimately increasing the likelihood that they will make the right decision. In his article, Bloom emphasizes that "increased uncertainty suppresses investment, contributing to the increasing popularization of the wait-and-see model of new investment spending" [18].

However, from a macroeconomic point of view, this does not bode well for economic results. First, business caution reduces the amount of capital of production factors and labor force. On the other hand, limiting household consumption leads to a reduction in aggregate economic demand. In addition, uncertainty can also negatively affect the productivity growth of the economy by slowing down the reallocation of available resources aimed at increasing efficiency [19].

According to the theory, various studies demonstrate that the negative impact of uncertainty depends on the degree of irreversibility. Thus, relatively "irreversible" decisions — that is, decisions that are impossible or costly to change or reverse — are more strongly affected by increasing uncertainty than a relatively "reversible" decision. An analysis of production figures before and during the Great Depression in the United States since 1929 supports this assumption. Increased uncertainty in the form of stock market volatility is negatively correlated with real production of consumer durables such as automobiles. This indicates that consumers will buy fewer products from this category in uncertain times, as the wrong decision will have far-reaching and costly consequences due to the long life of the product and its high price. Thus, the results may explain the sharp drop in US consumer durables production after the stock market crash of 1929 [20].

In addition, the negative effect of uncertainty may also depend on the degree of influence. An analysis of corporate investment in the US provided ample evidence for this. On the one hand, an increase in the geopolitical risk index increases the investment activity of companies operating in geopolitically sensitive sectors such as tourism, e.g. [21]. On the other hand, the negative correlation between the index of economic policy uncertainty and capital expenditure is particularly strong for companies with a high proportion of demand in the public sector [22].

Financial intermediaries also play an important role in propagating fluctuations in uncertainty. When risk increases, they seek to protect themselves against default risk by charging a premium to cover default costs. In their

works, C. Arellano, Y. Bai, and P.J. Kehoe [23], as well as L.J. Cristiano, R. Motto, and M. Rostagno [24] were the first to use a general equilibrium system to model the interaction between financial markets and uncertainty fluctuations. Not surprisingly, the Great Recession of 2008-09 prompted this connection through clear theoretical models. To better understand why financial conditions are an important channel through which fluctuations in uncertainty are transmitted to the economy, L.J. Cristiano, R. Motto, and M. Rostagno [24] complement the financial accelerator model originally developed by B. Bernanke, M. M. Gertler, and S. Gilchrist [25] to take into account the presence of uncertainty shocks. Thus, entrepreneurs take external loans to purchase raw materials.

Sometimes directing this capital to the production process is successful, sometimes not. In the financial accelerator model, each entrepreneur determines the level of productivity independently. When the cross-product variance among entrepreneurs increases, the average productivity of entrepreneurs remains the same, but more extreme high and low productivity values are observed. As a result, financial intermediaries charge a higher premium to protect themselves as more entrepreneurs choose to underperform and default on their debts. Such an uncertainty shock increases both the risk of default and the cost of external funds. This leads to a drop in the economic activity of entrepreneurs, and, in turn, to a slowdown in aggregate activity.

The financial channel describes the relationship between uncertainty, risk and the cost of credit. The theory is based on the assumption that an increase in uncertainty leads to an increase in risk, for example, as a result of an increase in the probability of defaults. Because investors generally want to be rewarded for taking risks, high uncertainty leads to higher financing costs due to increased risk premiums. Uncertainty and, as a result, the deterioration of financing opportunities, in turn, reduces aggregate economic output and employment. Companies act with more caution, reduce the use of factors of production such as labor or capital, and thus seek to prepare for possible shocks [23].

The growth of uncertainty (in the form of dispersion of corporate expectations within the sector) negatively affects investment projects with low irreversibility only in combination with an unfavorable financing situation. For this category, companies with almost unlimited funding opportunities do not show significant changes in planned investment activities. However, for projects with high investment irreversibility, the effect of uncertainty is negative, regardless of the companies' financing options. Thus, the results provide empirical evidence for the fact that, first, the financing channel primarily affects firms that are already in a difficult financial situation, and, second, that this effect manifests itself through a lower number of fixed investments [26].

Strategic savings is also a common channel through which uncertainty affects the economy and is defined by H. Leland [27] as "additional savings caused by random rather than determined future income." Many economists have documented that increased uncertainty during the Great Recession was accompanied by a sharp increase in

savings, suggesting that uncertainty can influence household consumption decisions. For example, A. Mody, F. Ohnsorge and D. Sandri [28] in their work used a panel of OECD countries and established a close and positive relationship between the level of savings and the uncertainty of labor income between 2007 and 2009. It is estimated that more than 40% of the increase in the average savings rate during the Great Recession can be attributed to the precautionary savings channel. The reason for this relationship is simple: when households face a higher risk of bad outcomes, they try to protect themselves by saving more. This precautionary saving leads to a further reduction in consumption and an excess of the desired savings. The authors show that more than two-fifths of the increase in household savings between 2007 and 2009 is a response to the motive of accumulating strategic savings.

In addition, in his work, E. Challe [29] developed a dynamic stochastic model of general equilibrium (DSGE) with incomplete insurance and heterogeneous economic agents and showed that a change in uncertainty about unemployment generates an increase in strategic savings, which, in turn, leads to a fall in aggregate demand. The channel of strategic savings refers to the consumption smoothing motive. Accordingly, private households prefer stable consumption over a long period of time without significant fluctuations in income in any period. However, in times of high uncertainty, they become increasingly concerned about future income losses, which creates a growing incentive to take precautionary measures by forming strategic savings [30]. Hence, uncertainty-induced restraint of household spending plays its role in the slow recovery phase after the crisis.

Uncertainty can also negatively affect the economy by increasing the risk premium. Investors want to be compensated for higher risk, and increased uncertainty prompts them to demand higher risk premiums. Uncertainty can also increase the cost of debt financing: banks are more likely to charge higher interest rates because uncertainty increases the likelihood of default. In both cases, the higher cost of financing will have a negative impact on the economy through the impact on investment and consumption.

Uncertainty can also affect the effectiveness of economic policy and can imply changes in the composition of the optimal mix of strategies. For example, a reduction in the elasticity of investment to changes in business conditions, such as the level of interest rates, during periods of heightened uncertainty would require a more substantial reduction in interest rates to achieve the same effect on investment as in normal times.

CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH IN THIS AREA

Taking into account the above review of the scientific works of well-known economists, understanding the variability of the state of the world economy today, as a response to the increasingly frequent shocks of uncertainty, and assessing the potentially far-reaching significance of uncertainty for the future development of the economy, it becomes obvious why over the past few years, the study of this aspect has gained critical attention.

importance and why significant attention is now paid in the economic literature to the characteristics of the impact of uncertainty on the economy.

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