The phenomenon of economic singularity as a result of macroeconomic uncertainty

M. Głaczyński

O. Ivanytskij

Collegium Humanum-Warsaw Management University

Institute of Religious Sciences St. Thomas Aquinas

Post-graduate student

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Michał Głaczyński, MSc, MBA,
President-Founder of the
Collegium
Humanum-Warsaw
Management University,

Ivanytskij Oleg
Vladyslavovich,
Institute of Religious
Sciences St. Thomas Aquinas
Post-graduate student,
Ph.D. in Public
Administration

Macroeconomic uncertainty is the most important feature of the modern civilizational development. In its manifestations, it can cause an even more threatening phenomenon, which in scientific literature has been called "the point of singularity". The article attempts to summarize the scientific views on the phenomenon of economic uncertainty, and to show the evolution of the concepts of "uncertainty" and "singularity".

Revealed the causes of the singularity, which are associated with a reduction between production and consumption time; minimization of the mediation functions that the financial and economic system took upon itself; the instability of production and economic relations and the lack of the possibility of forecasting their development; crowding out living labor and replacing it with capitalized one. It is shown that the notion of "a zone of singularity" more precisely corresponds to a possible scenario of economic development. Preparation for future changes involves the study of macroeconomic risks, their identification, assessment of the possible consequences of their materialization.

Key words: singularity; macroeconomic uncertainty; point of singularity; risk; zone of singularity.

Introduction

At the beginning of the XXI century, scientists noted a sharp increase in uncertainty in all spheres of human existence. At the same time, ignoring this phenomenon in the theory and practice of management is a huge problem that leads to crisis phenomena in the economy of the country and entire regions. Uncertainty is immanent in the economic system, and with the development of globalization, this phenomenon is intensifying and reaching a critical point. Scientists determined it as the point of singularity.

One can name a sufficient number of scientists who have made a theoretical and practical contribution to the development of the theory of uncertainty. The founders of the theory of risk and uncertainty are J. M. Keynes, J. B. Clark, A. Marshall, O. Morgenstein, F. Night, J. Neumann, A. Willet, F.B.Houley. Among the scientists who have devoted their

work to the study of the phenomenon of uncertainty are also A.Korotayev, N.Makasheva, A. Nazaretyan, Y.Olsevich etc.

At the same time, the complexity of the problem determines the importance and relevance of the permanent scientific developments of the problem.

The goal

of the publication is to summarize the scientific worldviews regarding uncertainty and singularity as its extreme degree.

Theoretical foundations

The development of the theoretical justification of the phenomenon of uncertainty associated with the names of the classics of economic theory such as J.M. Keynes, C.Kindleberger, L.Myzes, F.H. Knight, R.Aliber.

Discussion

J.M. Keynes criticized some statements of supporters of the neoclassical school concerning risk and uncertainty. Introducing the concept of "risk appetite", the thinker made a clear distinction between risk, which can be quantified, and uncertainty, which arises as a result of random actions. Keynes wrote: "... our knowledge of the future is fluctuating, vague and uncertain..." [1].

The revolution that Keynes made in economic theory is connected with the recognition of uncertainty as a basic characteristic of the monetary economy [2]. Keynes insisted on tackling the problem of economic uncertainty as one of the most important tasks of the government.

A different approach to the assessment of uncertainty belongs to Ludwig von Mises. The question of the nature of uncertainty was of no great interest to Mises. The scientist recognized the fact of the fundamental limitedness of knowledge on the basis of which people act. "The most that can be achieved relative to reality is probability" [3, p.101]. Thus, the scientist's works later became the basis for mathematical models of risk prediction.

F.H.Knight in his fundamental work "Risk, uncertainty and profit" [4] paid quite a lot of attention to the concept of uncertainty. The scientist noticed that the practical difference between the categories of risk and uncertainty is that when it comes to risk, the distribution of outcomes in a group of cases is known either through a priori calculations or from statistical data of past experience, whereas in conditions of uncertainty it is not so for the general reason that the situation that one has to deal with is very unique, and it is not possible to form any group of cases [4, pp.225-226]. At the very basis of the problem of uncertainty in the economic theory lies the inherent tendency towards the future itself [ibid., p. 229]. The selection of the criteria for the separation of risk and uncertainty in the future served as the basis for the formation of multi-vector schools. Their representatives focused mainly on risk assessment and forecasting, or on philosophical and economic understanding of the category of "uncertainty" and determining its impact on macroeconomic indicators.

The well-known financial historian C. Kindleberger and his co-author R.Aliber wrote about the inherent instability of the economy. Scientists have associated uncertainty with speculative mania, leading to the emergence of credit bubbles; the complexity of the economy, its financial structure, the contradictory interests of the participants and their irrational behavior. Crises arise, as scientists have noted, as a result of pro-cyclical changes in the supply of credit. Light credit, caused by the easy gains from rising property prices and speculation, inflates bubbles. Speculative mania, irrational behavior and panic continue the processes that culminate in a crisis in one country, and then - along the chain - in other countries [5].

Russian scientist Y. Olsevich also underlined the fundamental market uncertainty [6;7]. He wrote that in economics, as well as in the practice of public administration, the phenomena of increasing uncertainty was ignored, which were replaced by an analysis of market risks.

The same was stated at the meeting of the British Academy Forums in 2009. Economic science for more than

three decades stopped studying the problems of macroeconomic risk and the threat of crises, relying on market self-regulation, the magic power of new banking instruments or seeing the economy's "picture" in particular, and not more globally and widely. There is a widespread point of view that it is better (at least cheaper) to deal with the effects of bubbles in stocks and housing markets than to prevent them in advance [8].

Such nihilism in relation to the prediction of the future is reflected in managerial practice, which does not contribute to solving the problems of uncertainty and instability of the macroeconomic environment.

At the same time, not only the phenomena of the scientific and technological revolution (technical component of progress), economic transformations (economic component), but also social bifurcation changes (societal component) were rapidly gaining momentum.

Economic, political and financial uncertainties are closely related to each other. In this regard, the phenomenon of institutional uncertainty arises. A.Kolomiets means by this concept "uncertainty in relation to the use, possession, disposal of property that is the subject of transactions and necessary for entrepreneurial activity, uncertainty in relation to the receipt and distribution of income from it". Also uncertain are the benefits and costs associated with the implementation of contracts, including those of third parties [9, p.107].

The interrelationships of all these and other types of uncertainty, together with the synergistic effect, have given unprecedented instability, which meant the emergence of areas and spheres of human activity that came out of control. This period, scientists have dubbed the singularity point, which will occur, in their opinion, around the middle of the twenty-first century. "On the horizon there is a phase transition of such a scale and significance, of which mankind or the biosphere did not survive in the previous history" [10, p.33].

Economic Singularity is a scientific metaphor [11]. According to it, if each act of consumption is as close as possible in time to the act of production, the current financial and economic system will lose all meaning. This is primarily due to the possibility of minimizing the role of "intermediary" (financial and economic system) due to the limiting reduction of working time for the production of a single product, when the production of such a product will require a minimum effort, which reduces to the act of the order.

If we proceed from the position that the economy as a phenomenon arose at the time of splitting, separation in space and time of the processes of production and consumption, which, in turn, gave rise to a complex system of non-biological production and financial relations, it is legitimate to raise the question of the possibility of a kind of evolutionary "reverse" when the achievements of scientific and technological progress allow acts of production and consumption to bring together to the utmost.

If we accept the position that the financial and economic system par excellence provides a balanced interaction between production and consumption processes, then, provided these processes are automated, the need for such a system will disappear. And, if not the financial and economic system as such, then at least its current stage of

development. The moment after which the current production-financial relations will lose stability, and the parameters of the new ones will be fundamentally unpredictable, we will call the economic singular point.

However, to calculate the exact date of such a moment (despite the numerous attempts made in relation to a similar technological singularity), in our opinion, is not possible. In this case, it is more expedient to speak not about the "point of singularity", but about the "zone of singularity".

In general, singularity is a kind of aggravation [11], testifying to the existence of a world-system "phase transition" process. Paradoxically, one of the significant factors indicating a zone of economic singularity ("stress") is the indicator of human labor costs for the production of a particular product. Since the number of man-hours spent in production is constantly decreasing, and the development of technologies and communications is rapidly progressing, we can say that there is a tendency of the economy to move towards combining acts of production and consumption.

With the development of the economy, an ever smaller amount of living human labor is being put into production, it is gradually being superseded by the accumulated labor of past generations accumulated in the means of production [12]. In the event that this trend does not undergo significant changes, the economic singular point may come in the future covered by long-term or even medium-term forecasts.

Automation of production and logistic capabilities have already reached the level when it is justified to raise the question of utility of one or another form of financial management of production. However, changes can also have negative (if not catastrophic) consequences, and therefore pose a serious risk.

Speaking at the World Government Summit in Dubai in February 2019, Nobel Prize winner in economics Paul Krugman warned of a crisis that can be expected, he said, this or next year.

Conclusion

Singularity is a scientific metaphor, a result of macroeconomic uncertainty. The causes of the singularity are associated with a reduction between production and consumption time; minimization of the mediation functions that the financial and economic system took upon itself; the instability of production and economic relations and the lack of the possibility of forecasting their development; crowding out living labor and replacing it with capitalized one. The notion of "a zone of singularity" (in contrast to "point of singularity") more precisely corresponds to a possible scenario of economic development. The foregoing leads to the need to develop a system of risk management, accounting and forecasting of the phenomena of uncertainty, which would adequately respond to the unprecedented threats associated with heightened negative manifestations of macroeconomic risks.

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