

# THE THEORY OF TIME IN ECONOMY AND PERSPECTIVES OF ITS APPLICATION TO STUDYING MODERN RUSSIA'S ECONOMIC SYSTEM

POPKOVA ELENA (ORCID 0000-0003-2136-2767)<sup>1</sup>

<sup>1</sup>Institute of Scientific Communications

**Abstract.** This work formulates fundamental provisions and offers the methodological tools of the Theory of Time in economy. The author substantiates perspectives of application of the Theory of time in economy to studying modern Russia's economic system. The proprietary methodology of calculating "underdevelopment whirlpools" is used for determining time disproportions in development of modern Russia's economic system. Based on studying cyclic fluctuations of the Russian economy, the calendar of its development is compiled, according to which the most probable time period of overcoming the disproportions in development modern Russia's economic system is determined. Relative and absolute dynamics of development of modern Russia's economic system in 1995-2020 is determined, and a comprehensive dynamic model of development of modern Russia's economic system from the positions of the Theory of Time in economy is compiled. This model showed that federal districts of the Russian Federation are peculiar for different growth of GDP per capita. The most perspective time period for leveling time disproportions in development modern Russia's economic system is 2020, when, according to the economic calendar of all federal districts of the RF, there will be moderate rise or intensive growth. However, this requires targeted efforts, without which disproportions will be preserved or increased. As a result, it is substantiated that economy has its own time, which is different from physical time, and each economic system has its own time..

**Keywords:** Theory of Time in economy, time disproportions, "underdevelopment whirlpools", economic calendar, Russia's economy.

## INTRODUCTION

The time aspect of economy is studied fragmentarily and without any system within separate concepts of the economic theory. The attempts of classification of economic systems according to the time principle (according to the level of socio-economic development), within which developed and developing countries are distinguished, are contradictory and do not have a strong evidential basis and methodological provision, thus leading to scientific discussions.

Thus, a problem of imbalance of space and time study of modern economic systems arises, which leads to incompleteness of the picture of national economies and the global economy and thus limits and distorts the information and empirical basis of

development and making of managerial decisions at the corporate, territorial, and global levels, leading to their non-optimality, which results in crises of modern economic systems.

This explains topicality of systemic study of the time aspect of development of modern economic systems and development of the Theory of time in economics, which should become a part of the economic theory – together with world economics, macro-economics, and regional economics, which form the Theory of space in economics. This problem is to be solved in this article, which purpose is to develop conceptual provisions of the Theory of time in economics and to substantiate its application to study of modern Russia's economic system.

## LITERATURE OVERVIEW

Various characteristics and manifestations of the time aspect of development of modern economic systems are distinguished and studied within the following concepts of the economic theory:

*Concepts that study past time:*

- concept of economic cycles (Mohammedi et al., 2018);
- concept of time rows (Shahbaz et al., 2018).

*Concepts that study present time:*

- concept of economic growth (Kupina and Salko, 2015);
- concept of economic crises (Raźniak et al., 2018);
- concept of lost opportunities, (Staford et al., 2011);
- concept of economy of human labor (Hecht, 2018).

*Concepts that study future time:*

- concept of extrapolation (Pirker and Lichtenegger, 2018);
- concept of scenario analysis (Jalles, 2017);
- concept of given indicators (Creemers, 2018).

Separation of these concepts leads to multiple gaps in study of the time aspect of modern economic systems. For filling these gaps, it is necessary to reconsider the provisions of these concepts and to develop (on their basis) a comprehensive Theory of time in economics, within which economic time is viewed and studied continuously and in close connection and mutual dependence between past, present, and future time.

## METHODOLOGY

Complex analysis of the existing concepts of the economic theory that study economic time showed that there's a relative (as to the objects of comparison) and absolute (as to themselves in past time periods) dynamics of development of economic systems. For studying relative dynamics, it is expedient to use methodology of calculation of "underdevelopment whirlpools", which is described in the works (Popkova et al., 2018a) and (Popkova et al., 2018b).

## RESULT

As a result, relative and absolute time dynamics of development of modern Russia's economic system in 1995-2020 is determined, and a comprehensive dynamic model of development of modern Russia's economic system from the positions of the Theory of time in economics is compiled (Figure 1).

The compiled dynamic model of development of modern Russia's economic system from the positions of the Theory of time in economics shows that federal districts of the RF are peculiar for unequal growth of GDP per capita. Vertical axis shows economic calendars of development of federal districts of the RF. Horizontal axis shows present time, which corresponds to the Russian level of GDP per capita. Most federal districts, despite the positive dynamics of GDP per capita, are in the past.

The most perspective time period for leveling time disproportions in development of modern Russia's economic system is 2020, when, according to the economic calendar of all federal districts of the RF, there will be moderate growth of intensive growth. However, this will require targeted efforts, without which disproportions will be preserved or increased.

## CONCLUSIONS

Thus, it is substantiated that economy has its own time, which differs from physical time, and each economic system has its own time. However, the performed research allowed outlining the contours of the Theory of Time in economics, as a lot of provisions remained without attention. In particular, speed of the flow of economic time depending on its density is very interesting. This conceptual provision and development of the Theory of Time in economics should be studied in further research in this sphere.

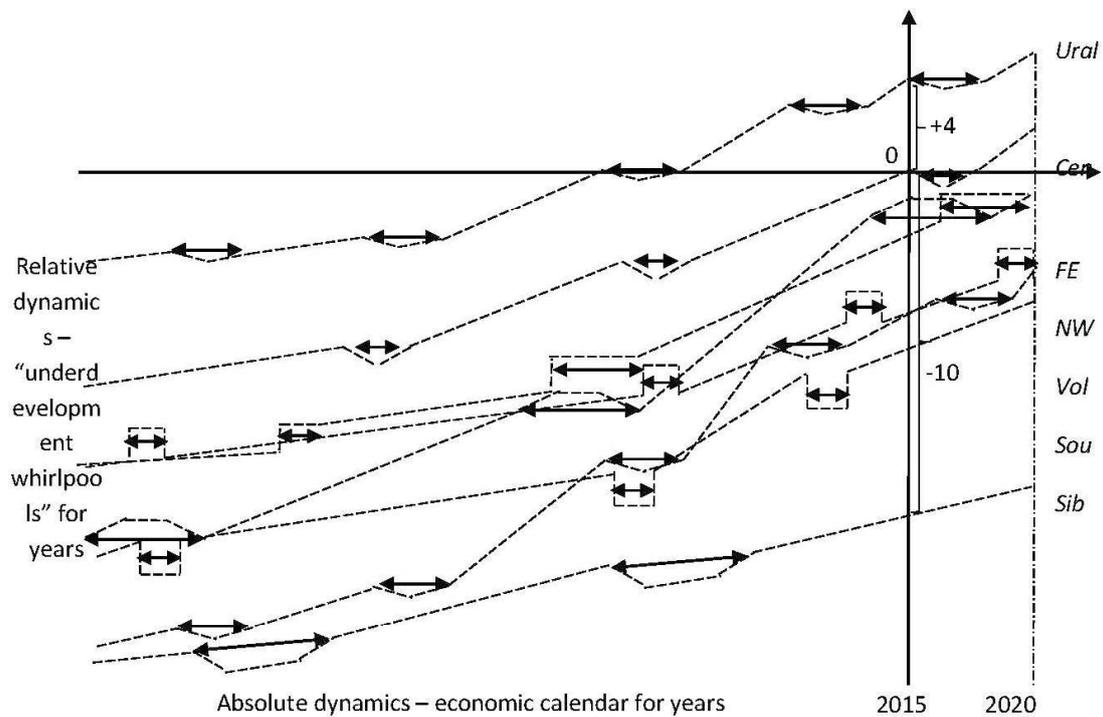


Fig. 1 Dynamic model of development of modern Russia's economic system from the positions of the Theory of Time in economy  
Source: compiled by the author

## REFERENCES

1. Creemers, S. (2018). Moments and distribution of the net present value of a serial project. *European Journal of Operational Research*, 267(3), p. 835-848.
2. Hecht, J. (2018). Research and development and labour productivity: do high-tech firms exhibit labour- or capital-saving technical change? *Applied Economics*, 50(16), p. 1790-1811.
3. Jalles, J.T. (2017). Forecasting performance of private sector's unemployment forecasts in advanced economies. *International Review of Applied Economics*, 31(6), p. 707-733.
4. Kupina, Q., Salko, D. (2015). Banking system performance on actual stage of economic development (A comparison analysis of banking systems of Albania and Kosovo). *Mediterranean Journal of Social Sciences*, 6(2), p. 345-353.
5. Mohammadi, A., Ahmadi, M.H., Bidi, M., Ghazvini, M., Ming, T. (2018). Exergy and economic analyses of replacing feedwater heaters in a Rankine cycle with parabolic trough collectors. *Energy Reports*, 4, p. 243-251.
6. Pirker, S., Lichtenegger, T. (2018). Efficient time-extrapolation of single- and multiphase simulations by transport based recurrence CFD (rCFD). *Chemical Engineering Science*, 188, p. 65-83.
7. Popkova, E.G., Bogoviz, A.V., Lobova, S.V., Alekseev, A.N. (2018a). "Underdevelopment whirlpools" as manifestation of disproportions of economic growth in modern Russia. *Studies in Systems, Decision and Control*, 135, p. 155-162.
8. Popkova, E.G., Bogoviz, A.V., Lobova, S.V., Romanova, T.F. (2018b). The essence of the processes of economic growth of socio-economic systems. *Studies in Systems, Decision and Control*, 135, p. 123-130.
9. Ražniak, P., Dorocki, S., Winiarczyk-Ražniak, A. (2018). Eastern European cities as command and control centers in a time of economic crisis | [Vzhodnoevropska mesta kot središča Vodenja in upravljanja med gospodarsko krizo]. *Acta Geographica Slovenica*, 58(2), p. 101-110.
10. Shahbaz, M., Shahzad, S.J.H., Mahalik, M.K., Sadorsky, P. (2018). How strong is the causal relationship between globalization and energy consumption in developed economies? A country-specific time-series and panel analysis. *Applied Economics*, 50(13), p. 1479-1494.
11. Stafford, M.B.R., Reilly, T., Grove, S.J., (...), Bhandari, R., Copeland, J. (2011). The evolution of services advertising in a services-driven national economy: An analysis of progress and missed opportunities. *Journal of Advertising Research*, 51(SUPPL. 1), p. 136-152.