

Introduction.

The Relevance of Kondratieff's Ideas Today

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Nikolai Dmitriyevich Kondratieff (born 4 March 1892 – died 1938) was a Russian economist and statistician, known for his analysis and theory of large cycles of conjuncture – the so-called Kondratieff waves.

He was a member of the Russian Party of Socialist-Revolutionaries. From 1920 to 1928 Kondratieff taught at the Timiryazev Agricultural Academy and was director of the Institute of Conjuncture. During that period he helped to develop the first of the Soviet five-year plans, and a methodology for analyzing the economic factors that would stimulate economic growth in the Soviet Union. Kondratieff opposed total collectivization of agriculture and criticized the unreasonable development of industry and agriculture. In April 1928, Kondratieff was dismissed from his post as a director of the Institute of Conjuncture. He was arrested on charges of the Labour Peasant Party. In 1931 Kondratieff was sentenced to eight years in prison and then to death. When and where he died remains unknown. In 1987 was cleared of all charges.

Nikolai Kondratieff contributed significantly to various fields of economics. He became famous abroad during his lifetime. One of his most outstanding works was *The Basic Problems of Economic Statics and Dynamics*. Among all significant contributions to a number of areas of economic science Kondratieff's theory of long cycles (waves) brought him the greatest popularity. Kondratieff was not a discoverer of long waves in economic and social dynamics, but the founder of the first scientific theory of these waves, which had already become long cycles in this theory.

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Thus, one can refer N. D. Kondratieff to a special type of researchers who, on the basis of already known facts, phenomena and strange things that had not been explained by science before, created a new theory that changed the understanding of the nature and patterns of phenomena in some or other area opening up new possibilities for further studies. The theory of long waves is of particular importance. It serves as an important tool for an adequate understanding of current world system processes and for their prediction.

Although no theory can be the only true and describes only approximately the real situation, there are theories that, with modifications, continue to serve as an aid to researchers. They provide certain models and patterns, which, when applied to reality, help to analyze and understand it better. There have been many claims to Kondratieff's theory of long waves. To a greater or lesser extent we have touched upon these aspects in our works (Grinin and Korotayev 2012, 2019; Grinin, Korotayev, and Tausch 2016).^{*} However, despite all these criticisms and doubts, Kondratieff's theory helps to analyze not only the current situation, but also historical trends including global and country trends in different aspects. Some works of the first issue of 2012 were devoted to this aspect (e.g., Modelski 2012; Devezas 2012; Berry and Dean 2012).

Kondratieff's theory, as well as many other potentially effective theories, should not be treated as a believer treats the Holy Scripture, expecting a complete coincidence of theory and practice, theory and reality. One should treat such effective methodologies as a necessary tool that helps to outline some tendencies and laws, but only to outline them, to show the direction of search, as the compass does. Such theories should be treated creatively, trying to combine them with other theories to develop a more comprehensive view. We tried to show this on the example of Kondratieff's theory and theories of technological revolutions (see also Grinin 2019; Grinin L., Grinin A. 2021; see also our article in this issue 'The Sixth K-wave in the Light of Cybernetic Revolution, and Global Aging'). Such approaches have synergistic effect.

Therefore, we are confident that Kondratieff's ideas will be relevant for a very long time when using them creatively, not dogmatically.

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The seventh issue of the Yearbook 'Kondratieff Waves' has the subtitle 'Kondratieff's Theoretical Legacy: Perspectives from Modern Times'. Its papers cover a whole range of problems.

The Yearbook consists of three sections.

^{*} See also our response to Kondratieff's critics in Grinin and Korotayev 2014a, 2014b.

Section I (N. D. Kondratieff's Biography, Creativity, and Heritage) includes six articles.

It starts with an article by **Valentina M. Bondarenko** ('N. D. Kondratieff's Legacy and the Role of His Views in Analyzing Modern Economic Problems and Trends') which describes the history of recognition of N. D. Kondratieff's ideas, especially in the field of the theory of conjuncture, regularities of its dynamics, and long waves of economic conjuncture. At first they were recognized abroad, and in Russia – only since the late 1980s of the 20th century. Kondratieff's legacy is much richer. He formulated methodological approaches to the analysis of what is (Sein) and what ought to be (Sollen) and analyzed the correlation between teleological and genetic methods of research. He laid the foundations for the development of the theory of forecasting. But it is the Kondratieff's doctrine on cyclical fluctuations of long waves of economic conjuncture that is most accepted by modern scientists and is the basis for analyzing today's economic problems and trends.

Sergey L. Komlev in his article ('Afterword to the Interview That Took Place More Than Thirty Years Ago') reproduces the text of his interview with A. A. Konyus, Doctor of Economic science, which took place in the late 1980s, during the years of perestroika and glasnost when it became possible to return the undeservedly forgotten names of Soviet economists who had become victims of political repression. A. A. Konyus shared his memories about the activities of the Institute of Conjuncture of the People's Commissariat of Finance, which in the 1920s was headed by N. D. Kondratieff. The Institute set itself the task of studying the conjuncture of the world and domestic economy in order to control spontaneous processes in the economic life and in the sphere of financial regulation of the country with the help of dirigiste methods. Special attention was paid to the methods of constructing indices of 'free' market prices.

Nataliya A. Makasheva ('When History Invades Science: To the 130th Anniversary of N. D. Kondratieff's Birth') analyzes N. D. Kondratieff's approach to the construction of a general theory of dynamics, presented in his unfinished work 'Basic Problems of Economic Statics and Dynamics', written in prison. The approach proposed by Kondratieff is considered in the context of the discussion of this problem in the West, including in connection with the formulation of the most important methodological problems of economic science of the respective period.

Elena A. Tyurina ('To the History of N. D. Kondratieff's Private Collection in the Russian State Archive of Economics') presents the history of the return of the name of an outstanding scientist N. D. Kondratieff to economic science. The Russian State Archive of the Economy together with the International Fund named after him took an active part in the preservation of the famous economist's legacy. The *Selected Works* of N. D. Kondratieff published in 1993 contains a section with the documents from the funds of the Russian State

Archive of the Economy. The acceptance for permanent storage of the collections of repressed economists and especially N. D. Kondratieff's private archive, as well as the publication in 2004 of his 'Suzdal Letters' was a significant event for the archive. The author introduces the reader to the unpredictability of archival research, the importance of 'discoveries' that constantly accompany archivists in their work.

Alexander I. Ageyev ('Nikolai Kondratieff: In the Millstones of History') examines the reasons for the arrest, strategy and tactics of the investigation, as well as the evolution of N. D. Kondratieff's behaviour and views. It also raises the question of the correlation between fiction and reality in his criminal case.

Leonid E. Grinin, Tesselano C. Devezas, and Andrey V. Korotayev in their article ('Kondratieff's Mystery') provide some facts from Kondratieff's biography and highlight the importance of the Yearbook 'Kondratieff Waves'.

Section II (Technology and Economy) consists of three contributions.

The article by **Alexander E. Aivazov and Vladimir A. Belikov** ('A. Toffler's Civilization Waves and Cycles of Economic Development'), based on the synthesis of scientific forecasts of the 20th-century scientists, considers civilization waves in the history of human development. The authors also define the economic basis for their formation, development and change provided by the formation, development and change of technological paradigms and by technological revolutions leading to the change of paradigms of public management, to the formation and change of systemic cycles of capital accumulation, formation and development of world economic paradigms and their movement to different regions of the world.

Leonid E. Grinin, Anton L. Grinin, and Andrey V. Korotayev in their article ('The Sixth K-wave in the Light of Cybernetic Revolution, and Global Aging') analyze the relationships between K-waves and major technological breakthroughs in history and offer forecasts about features of the sixth Kondratieff wave. For the analysis they use the basic ideas of long cycles' theory and related theories (theories of the leading sector, technological styles, *etc.*) as well as the ideas of our own theory of production principles and production revolutions. The latest of production revolution is the Cybernetic Revolution that, from our point of view, started in the 1950s and is still going on. The authors assume that in the 2030s and 2040s the sixth K-wave will merge with the final phase of the Cybernetic Revolution (which they call a phase of self-regulating systems) that will give a certain scope and strength to this wave. This period will be characterized by the breakthrough in medical technologies which will be capable to combine many other technologies into a single system of MANBRIC-technologies (medico-additive-nano-bio-roboto-info-cognitive technologies). The article also presents a forecast of the process of global aging

and argues why the technological breakthrough will occur in health care sector and related fields. Based on the above-mentioned theories, the authors make a prediction about the set of leading technologies (MANBRIC-technologies) that will form the basis of the sixth technological paradigm. The peculiarity of this MANBRIC complex will be that the majority of technologies will be self-regulating systems. One should also take into account that an ever-growing process of global aging will have a very significant impact on the development of technologies of the Cybernetic Revolution and the sixth technological paradigm because it will accelerate breakthroughs in medicine and related fields, and medicine will be an integrating component of the MANBRIC-complex at the first stages.

Andrey V. Korotayev, Stanislav E. Bilyuga, and Alisa R. Shishkina ('Which Countries Generate Kondratieff Waves in Global GDP Growth Rate Dynamics in the Contemporary World?') show that the Kondratieff wave dynamics in the growth rates of global GDP is generated now by the developing countries, while in the previous era the Kondratieff dynamics was generated primarily by the most economically developed countries of the First World. They revisit the question of the presence of the Kondratieff waves in the world GDP dynamics and find that, though in the post 1960 series they are quite visible at the global level, they are hardly visible in the GDP growth rates of the economically developed countries where the Kondratieff wave component (still detectable with special techniques) is almost entirely overwhelmed by the secular trend towards the decline of the GDP growth rates. After analyzing how much this trend is connected with the decline of the population growth rates and the decline of the share of investments in GDP, the authors move to the analysis of the Kondratieff waves in the GDP growth rates of the developing countries where they turn out to be much more pronounced and visible, which allows us to conclude that the K-waves are currently generated by the Third World. They also show that in the developing countries a pronounced Kondratieff wave dynamics is accompanied by an overall upward trend (that stands in a sharp contrast with the pronounced downward trend observed in the developed economies). Finally, they analyze Kondratieff waves in the efficiency of investments as well as demographic characteristics of the developing countries, which allows us to forecast that the GDP growth rates in the developing countries are likely to also step on the downward secular trend starting with the sixth Kondratieff wave.

Section III (Reviews) includes **Antony Harper's** review of *Handbook of Revolutions in the 21st Century: The New Waves of Revolutions, and the Causes and Effects of Disruptive Political Change* published by Springer International Publishing.

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