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Секція 3. Економіка та управління національним господарством

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GLOBALIZATION: FOR AND AGAINST IN THE CONTEXT OF THE MODERN TECHNOLOGICAL REVOLUTION

ГЛОБАЛІЗАЦІЯ: ЗА І ПРОТИ В КОНТЕКСТІ СУЧАСНОЇ ТЕХНОЛОГІЧНОЇ РЕВОЛЮЦІЇ.

ANNOTATION

The article analyzed recent trends in the world economy in the context of accelerating technological progress. The main socio-economic impacts of global change on society in an open economy are identified. The main directions of the long-term strategy for the development of the Ukrainian economy in the context of Industrial Revolution 4.0 were proposed.

Keywords: Globalization, technological progress, Industrial Revolution 4.0, scientific and technological revolution, socio-economic consequences of STP

АНОТАЦІЯ

В статті проаналізовано останні тенденції розвитку світової економіки в умовах прискорення технологічного прогресу. Визначено основні соціально-економічні наслідки глобальних змін для суспільства в умовах відкритості економіки. Запропоновано основні напрямки довгострокової стратегії розвитку української економіки в контексті промислової революції 4.0.

Ключові слова: глобалізація, технологічний прогрес, промислова революція 4.0, науково-технічна революція, соціально-економічні наслідки НТП

АННОТАЦИЯ

В статье проанализированы последние тенденции развития мировой экономики в условиях ускорения технологического прогресса. Определены основные социально-экономические последствия глобальных изменений для общества в условиях открытости экономики. Предложены основные направления долгосрочной стратегии развития украинской экономики в контексте промышленной революции 4.0.

Ключевые слова: глобализация, технологический прогресс, промышленная революция 4.0, научно-техническая революция, социально-экономические последствия НТП

Formulation of the problem. Recently, the world economy and world politics have been experiencing quite mixed and controversial developments. On the one hand, we have seen the deepening of the world's linkages between countries (but above all between firms and consumers from different countries) through Internet-based trade. On the other hand, in recent years we have witnessed the rise of anti-globalization sentiments in the Brexit society, the strengthening of the Movement against migrants in Europe and United States, the rejection of United States of the establishment of the Pacific Trade Partnership, the growing popularity of political parties in anti-globalization directions. All these processes are taking place against the backdrop of technological progress's acceleration, which, with the light hand of the Swiss Professor C. Schwab [1] has been named the fourth industrial Revolution. Therefore, there is a need to analyse the current trends in the world economy and to assess the socio-economic, and hence the political implications of, ongoing processes.

Analysis of recent researches and publications. Various aspects of modern developments in the global economy are being investigated in numerous jobs, of foreign as well domestic scientists. In particular, such authors as K.Schwab [1] M. Sandbu [2], J. Kay [3], G. Sorman [4], V. Geyets, A. Gritsenko [5], B. Danylyshyn

[6] Y. Antonyuk [7] etc, focuses on the economic impact of the modern technological revolution, analyzed ways to address the social problems associated with increasing structural unemployment due to automation of production processes.

Previously unsettled problem constituent. The modern phase of STR (Scientific Technological Revolution) is characterized by the acceleration of technological progress and the considerable backlog of institutional changes, creating of some problems for society.

Main purpose of the article is to analyze the socio-economic impact of the economic processes globalization in a context of accelerating technological progress.

The main material research. As the term is known, the Industrial revolution is concerned with the transition from an economy based on the dominance of agricultural production and manual labour to factory-based manufacturing (even though imperfect). The massive introduction of steam-powered machine technologies has not only caused technological change but also significant social. The urban population has rapidly begun to grow, the industrial and rural proletariat has emerged, and wage employment has increased in the tens of times.

Historically, the first industrial Revolution covers the end of the 18th century (England)-the middle of the 19th century (Western European and United States). It is at this time that a number of revolutions in Europe are taking place, the Civil war in United States.

The second Industrial Revolution, which is sometimes referred to as the technological revolution, marked the shift of the main energy (coal was replaced by oil), the large-scale introduction of electric power and motors, the priority development of the chemical industry, a revolution in the organization of the production process-the famous Taylor pipeline. It is at this time that the railway transport network is being formed, which has enabled the disparate of the movement of goods to be carried out. The invention of the wheeled steamer made the water arteries available for logistics. All this has led to production on a large scale and the beginning of standardization and unification of goods.

The second Industrial revolution covered the end of the 19th century. The events of 1917, the advent of Mussolini and Hitler can be seen as a consequence of the inadequate response of society to the growing contradiction between the development of productive forces and the nature of productive relations. In countries where the development of the economy has been accompanied by the development of democracy, a stable and relatively independent judicial system, there has been no open social conflict. The existing contradictions had been resolved through the evolutionary changes of society through reforms and the active role of the State in regulating relations between capital and labour.

The second half of the 20th century marked the practical exhaustion of development through industrial development in its classical form. The invention of computers has become a symbol of the birth of a new technological mode of production-post-industrial, information. Particularly dramatic changes have occurred in the past 25 years with the spread of the Internet. Those industries that are based on information technology have developed very rapidly. Today, in the developed countries, there are virtually no traditional (in the middle 20-century understanding) of the economic sectors. Almost the entire economy has become information. This is the circumstance that led Klaus Schwab, founder of the World Economic Forum in Davos, to approve the start of a new phase - Industrial Revolution 4.0. Schwab highlights three signs of a new phase of the Industrial Revolution: the speed of technological change, the scale of the information society and the system of processes that are taking place [1].

Technological revelations, which take place almost daily, offer unprecedented opportunities to increase production, improve quality and expand the range of consumer goods and equipment. Nanotechnologies, robotics, 3D printing, revolutionary advances in medicine and material science, the Internet of Things (IoT), unmanned transport, artificial intelligence, new energy reservoirs, all require fundamental changes in the organization of production and management systems. The fourth Industrial Revolution has offered humanity unprecedented opportunities to date. However, it also creates new challenges that require a clear vision of a society's

development strategy and a rapid response to changes, both power institutions, businesses, employees and society as a whole.

One of the biggest challenges on a global scale is the widening of the gap between developed and third world countries, the weakening of the importance of raw materials for the economy and the consequent decline in income in developing countries. This causes many social problems not only in those countries, but also in the developed countries, because of the growing flow of migrants into these countries, with all the negative consequences: the increase in social tensions in society, the rise of crime, racial, ethnic and confessional conflicts. Millions of people from Africa, the Near and Middle East, South-East Asia, Latin America storm the countries of Western Europe, North America, Australia in search of a better life, increasing problems in the labour market in those countries due to the fourth industrial revolution.

Automating production based on artificial intelligence makes millions of workers unemployed, hundreds of professions become redundant. This is the inevitable consequence of the scientific and technological progress that accompanies it all the history of mankind. However, the scale and, in our view, the most important is the speed of such changes, greatly exacerbating the social and economic situation of society.

If the rate of STP was lower, these processes were stretched in time and the labour force had the opportunity and time (!) for requalification, and this change of occupation was not too radical (for example, Miners became Subway builders). The adsorption of released personnel in small business and service areas has played an important role in stabilizing the social equilibrium. The State provided assistance in the acquisition of a new occupation, which generally required new skills that could be obtained from various refresher courses, advanced training, and so on. Today, the situation has radically changed.

First, a large part of the professions become robotic, including in the service sector, reduces the ability to find jobs for a large number of blue collars.

Secondly, the nature of the necessary competencies is changing. Creative thinking, the ability to successfully communicate with customers, the possession of modern information technology, is the first to be. Unfortunately, not all of this can be taught, in particular creativity.

Thirdly, there is a growing financial and, as a consequence, social stratification in society. Professionals involved in the development of robots, relevant software, research in the IT field are earning high incomes, while automation and robotization of production reduces the income of workers in the "creative" professions.

Another very important factor is the necessity of changing the profession during the lifetime of a large number of employees. If the person previously received education was generally sufficient to develop to retirement, it becomes the exception rather than the rule in extremely dynamic technological changes. Society is not ready to do so. People are beginning to find "guilty" and, in many cases, the main problem is seen by globalization. Under these circumstances, the influence of populist political forces and movements, which promise to society simple solutions to complex problems, is spreading. Brexit, Trump's victory is a confirmation of these trends.

Thus, economists and politicians need to respond today to a number of issues that give rise to the fourth industrial revolution, the main of which we believe are:

- how the world's geography of production will change;
- which sectors of the economy in the near term become robotic and what to do with survivors workers;
- how to reform public institutions within the country;
- how to reduce the negative social and economic impact of market globalization on developing countries?

It could be said that Ukraine is still "early" to take care of massive unemployment because of the production’s automation or the influx of migrants from the Middle East. However, we believe that today more than ever we need to develop an innovative strategy for the development of the economy and society. Copy already known world examples of the challenges of accelerated growth of the economy are unpromising. In the context of post-industrial society, the catch-up development

strategy used by the Tigers and Dragons in South-east Asia will only lead to the concentration of environmentally dirty and resource-intensive industries, metallurgy, petrochemicals, and others in our territory.

The usage of the International Currency Fund’s prescriptions without fundamental changes in the "front" against corruption-the path to stagnation of the economy and impoverishment of the population. All the funds received by the country were channelled towards financial stabilization and were accompanied by a reduction in budget expenditures, which had provoked a decline in production rather than investment promotion.

The growth in the share of the agricultural sector in GDP and exports, which has enabled parts and scientists and officials to speak of an "agrarian" driver for the development of the economy, is hardly a positive factor in the long term. Yes, indeed, in the short term, the agrarian sector has carried out (once again!) The role of the rescue circle for the sinking economy. But in the long term, despite the importance of agriculture, the industry will not be leading in developed countries. Our agriculture is based on the existence of natural benefits-fertile Ukrainian black soils. But in developed countries, the aquaponics cultivation of crops without soil (and therefore without pests and diseases) is rapidly growing.

During the years of independence, the Ukrainian economy became open. To date, about half of our WFP is exports. For these economies, autarky is disastrous. The open economies reach their success only in the context of the growth of the world economy. But this growth is disproportionate! Part of the industry-it economy is developing exponentially, traditional commodity-oriented industries, "trample" in the field, some industries are gradually fading away from the economic map of the world. Is there any chance in such circumstances for Ukraine? Of course there is! The Ukrainian IT-industry has enormous potential and is quite competitive in the world. Ukraine is a member of the first 30 countries of the world in terms of the index of human development, and the Ukrainian it developers are recognized as one of the most powerful in the world [7]. Advanced strategy this sector of the economy will be successful not only for the economy, but for the entire society.

Unfortunately, the state, instead of supporting that direction, often acted on the contrary. Numerous audits of IT-companies with the participation of power structures compel many creative entrepreneurs to leave Ukraine, especially since the information business is not physically bound to Ukrainian territory, such as industry or transport. We are losing valuable staff, not to mention purely monetary losses from unpaid taxes, lost jobs, and so on. It is not possible to prioritize the IT-technology sector without the support of education and science. Can Ukraine boast of state support for these sectors of society? It is regrettable to note that, on the contrary, the State has diminished or even denied such support. The educational reform projects that have already been announced are not intended to promote creative personalities. The reduction of public funding for higher education, scientific institutions, and the introduction of school fees in 10-12 grades-all this will aim at increasing the proportion of the labour force focused on physical work rather than creative mental. It is, at least naïve, to hope in these circumstances that «the so-called golden billions of the countries will be hit by the club.» We fully agree with the scientists of the Institute of Economics and Forecasting of Ukraine, which believe that «rationalization through cost savings, improved technical level and reduction of surplus jobs should be carried out in the industries related to the production of goods and services. And the industries involved in "human production" (education, science, health, culture) should grow both in production and employment» [5].

So, Ukraine is inneed of changing the priorities in its development strategy, taking into account today's realities. We believe that the main areas of the long-term strategy for the development of our economy should be:

- Support for the Ukrainian economy's IT sector by reducing the institutional pressure on IT companies;
- Development of a concessional tax regime for the IT sector (using experience, for example, Ireland)
- Upgrading of educational programs in both secondary and higher education, taking into account modern technological change;

- A preferential treatment for business that invests in education and science (creation of joint scientific and production complexes, logistical equipment of university laboratories, etc.);
- Not reducing, but increasing the financing of science and education (at least to the levels prescribed by law).

This is certainly not a complete list of actions, but it is a necessary condition for the progress of the Ukrainian economy and a real approximation of the standards of developed countries.

Conclusions and further researches directions. The technological revolution, which has significantly accelerated the renewal of the productive forces of society, requires adequate changes in the institutional environment. The increase of production's automatization of that based on modern IT technologies has created enormous socio-economic problems related to the effective employment of the population, which today cannot be solved by traditional methods. Ukraine's development strategy should provide for the priority development of the IT sector of the economy through state support and increased financing of education, science and culture, while at the same time modernizing educational programs that correspond to the realities of modern technologies.

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