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ANALYSIS OF THE LEVEL OF ROBOTISATION AND ITS IMPACT ON PRODUCTION

Introduction. Rapid advances in technology have led to a surge of public interest in automation and robotics. Driving the increase in public interest in robotics and automation is both a fascination with the potential of these technologies to change our lives, and a fear of the impact of automation.

Review of recent publications. Both native and foreign scientists, such as C.B. Frey [2], M.A. Osborn, M. Henkel [3], M. Arntz, T. Gregory, U. Zierahn [5] and others looked into the robotics and its impact on economic and social transformation of the world.

Objectives of the paper. The aim of the article is to analyze the current level of robotisation and the transformation processes that occur under its influence.

Results of research. The number of robots in use worldwide multiplied three-fold over the past two decades, to 2.25 million. Trends suggest the global stock of robots will multiply even faster in the next 20 years, reaching as many as 20 million by 2030, with 14 million in China alone. [1]

The rise of the robots will increase productivity, competitiveness, thus fostering economic growth. Moreover, it will result in the emergence of new industries providing new jobs. However, the active business models across many sectors will be strongly disrupted; tens of millions of the existing jobs will be cut, with human workers displaced by robots at an increasing rate because robots are increasingly becoming more sophisticated.

Merriam-Webster Dictionary defines a robot as 1) “a machine that resembles a living creature in being capable of moving independently (as by walking or rolling on wheels) and performing complex actions (such as grasping and moving objects)” and as 2) “a device that automatically performs complicated, often repetitive tasks (as in an industrial assembly line)” [2].

Production robots are typically used for as processing materials (laser cutting, mechanical grinding), assembling and disassembling, precision welding, painting, and handling a wide range of operations for measurement, inspection, packaging, bending, and casting.

Since 2010, the global stock of robots in industry has more than doubled: as many robots have been installed in the past four years as over the eight previous. [3] During this period, the centre of gravity in the world’s robot stock has shifted towards new manufacturers, mainly in China, Korea, and Taiwan but also India, Brazil, and Poland. Approximately every third robot worldwide is now installed in China, which accounts for around one fifth of the world’s total stock of robots. [5]

According to the International Federation of Robotics, the production of industrial robots on a global scale is already a global multi-billion dollar market, increasing annually by 12-18%. [3]

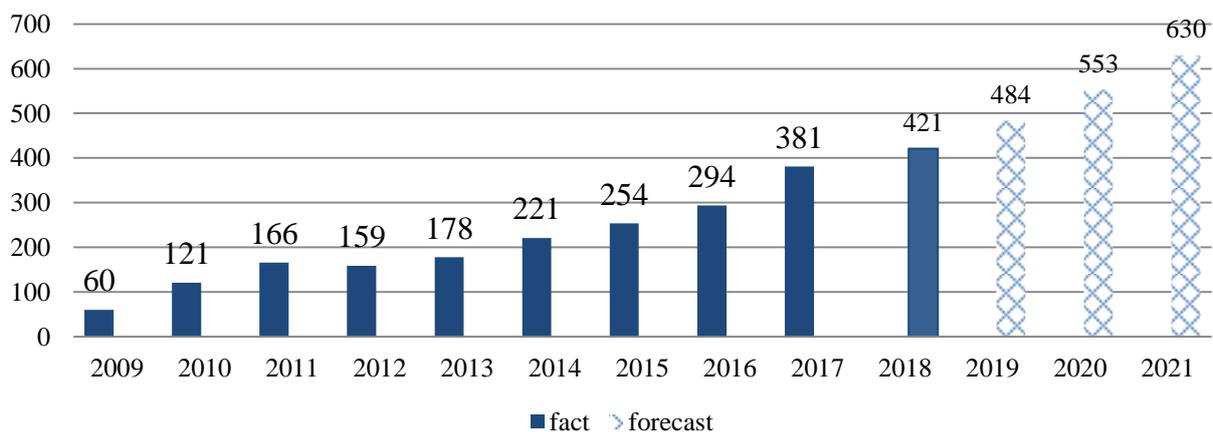


Fig. 1 The number of productive robots in the world, %
Source: created by the author based on [3]

Due to the recent advances in technology and global transformation processes in robotics, we can define three main reasons for the future automation of world’s production.

Firstly, robots are becoming many times cheaper than human workers are. The rapid expansion in robot installations is increasing because the labour costs in major manufacturing economies rise every year for more than 15%. [5] In China, for example, unit labour costs in manufacturing have increased by more than 65% since 2017. [6] Wage rates have also been rising consistently in Korea, Japan, the US, and Germany, in part due to the ageing of the population in these countries.

Secondly, robots’ capacity is skyrocketing. As robot technologies improve, they are being used in ever-more sophisticated processes, in more varied contexts, and can be installed more rapidly. Innovations have made today’s robots smaller, more sensitive to their environments, and more collaborative. [4]

Thirdly, robots help the entrepreneurs to increase the productivity, which leads to the maximization of the profit. Robotisation makes production safer and helps people avoid boring and monotonous work.

As robots become more efficient, capital would move from the traditional sector to the robotized one because of higher returns. This will result in labour in the traditional sector becoming less productive.

Moreover, robotics led to safer and more convenient production process. There is a very strong possibility that the recent reduction in length (in hours) of the workweek would continue. A five-day, 25-hour workweek for workers in Europe by 2030 is a distinct possibility as robotics provides greater room to worker welfare-oriented legislators, norm setting institutions, and efficiency-oriented corporate management.

At the same time, human workers will suffer significantly and will surely have to move from robotizing sectors to other sectors because of unemployment; it is also possible that effective loss of human capital will be associated with a loss in individual incomes. Moreover, the highly variable and random pace of innovation points to the possibility of a bulge in search unemployment of those seeking new jobs in a scenario of job destruction accompanying creation. This might give rise to significant and dangerous recessionary tendencies requiring prompt government action. An obvious antidote is a national tax on robotized production to fund basic incomes for the unemployed.

Conclusions. In summary, this paper argued that the high level of robotics causes the economic and social transformations in our society. Governments should regulate both positive and negative effects of this process. Direct and obvious scheme of government regulation of automation will provide high level of economic growth of the country. The robotics will increase competitiveness and make the production more efficient.

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GREAT BRITAIN AND BREXIT: CAUSES OF DISAGREEMENT BETWEEN THE UK AND THE EU

Introduction. The development of integration processes in the XX century became the reason for the creation of a number of political and economic associations, whose goal was a common development in peace and harmony. Although the United Kingdom joined the European Union, however, this decision from the very beginning of the London-Brussels cooperation has been criticized many times, and therefore the question of the termination of integration has been quite frequent, and the disintegration of the country during the whole period of British membership has been quite commonplace. On the 2016 referendum, the population of the United Kingdom expressed their desire for a separate development of Britain from the EU (later referred to as Brexit). The topic of the paper is undoubtedly relevant because despite the result of the referendum, political bargaining has not ended yet, damaging the UK economy, so the gloomy future of the Kingdom in case of leaving the European Commonwealth can be easily forecast. The United Kingdom is already sustaining economic losses with separatist sentiment growing in some regions. Moreover, intense arguments between top-echelon government officials are unlikely to end.

Review or recent publications. Among the scientists concerned with the UK's exit from the EU are I. Spivak, who explored the root causes of the UK's decision to exit; E. Popko, who examined the preconditions for a referendum on the UK's exit from the European Union; T. Neprytska studied the impact Brexit has on European integration processes. Besides, important research into Brexit has been done by J. Zahoruiko, O. Yizhak, O. Koval and others.

Objective of the paper is to analyze the causes of the discrepancies between the UK and the EU, as well as predict future scenarios for the development of the events and the prospects that they expect in case of different decisions.

Results of research. Since the beginning of the cooperation of the Foggy Albion with the Commonwealth, there has been deep skepticism over positive effects of integration. The consequences include currency issue, refusal to sign the Schengen agreement as well as a number of different political and economic agreements; loss of national identity due to the rapid influx of cheap labor and just people willing to reside in the United Kingdom on social benefits. Federalization of the European Union, and the banal disappointment in the EU geopolitical system added to the deterioration in the relationship between the UK and its European partners. Moreover, all the conflicts and disputes on the political arena convinced the