The trend of regionalization in global value chains

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Recently, economic science has been increasingly addressing the issue of the emergence of the trend towards deglobalization in the world economy. This trend has become visible since the beginning of the 21st century. Denying the progressive development of globalization processes, it has witnessed the emergence of the dominant characteristics of regionalization processes. Thus, there is a relatively new dilemma in the world economy-«regionalization vs globalization». It is relatively new because there have been discussions about it for a long time, since the 90-ies of the 20th century. However, at that time the idea was about the development of international regional integration processes, which seemingly negated the globalization processes, since they meant the creation of relatively closed regional economic unions. The modern wave of deglobalization has different bases. They are related to the peculiarities of international business activity, represented by global production, which is directly connected with the export activities of the countries in the world, and thus lays the basis for the trend towards globalization. What is the essence of modern changes in global production, if they have challenged the action of the trend towards globalization?

When considering the reasons for new phenomena in global production, we should first of all pay attention to the changes taking place in the technical and technological base of modern production. The gradual transition of economically developed countries to Industry 4.0, based on digitalization everywhere, has led to the progressive development of additive manufacturing, which fundamentally changes the entire production process. Additive manufacturing combines materials, usually layer by layer, to create objects based on 3D model data, i.e., by adding the required material rather than removing excess material, which is inherent to subtractive manufacturing methods. Subtractive methods are identified as the most traditional methods used in numerically controlled machining, and the term itself was introduced precisely to distinguish traditional manufacturing methods from new additive manufacturing methods, which necessarily have a three-dimensional information technology component.

There are several other fundamental differences between additive and subtractive manufacturing. First, the volume of production. Subtractive methods of production show a high coefficient of efficiency in the production of large batches of polymer products, additive methods are effective when using small-scale production, allowing for (a) design flexibility, (b) higher economy per unit of produced product and at the same time (c) stimulate development towards higher growth rates. Second, the relationship to economies of scale. In subtractive production, the economy of scale is determinative, a consequence of (a) the concentration of production in which the

country of concentration is not the country of sale of the products of this production, and the need to (b) minimize transport costs and (c) save on customs duties. As for additive manufacturing, economies of scale play a secondary role and sometimes do not matter at all because it is (a) usually a peer-to-peer production located close to the consumer, involving (b) production of customized products which is done without additional costs and (c) based on the reduction of trade of intermediate consumption. Third, additive manufacturing means the automation of production to an extremely high level, so it is less labour-intensive but more capital-intensive and therefore requires a high level of training and certain competencies.

The emergence and development of additive manufacturing has fundamentally changed both the global production process and the structure of global value chains. The offshoring of international companies, which was based on economies of scale and economies through the transfer of labour-intensive production to low-wage countries, was not sufficiently effective for the new technical and technological conditions. The organization of production in long and complex global value chains, which took advantage of optimal global factor allocation, proved its efficiency in terms of productivity, economies of scale and so on, but it exposed international companies to high supply risks in cases of political and economic shocks in host countries and made them less flexible to respond to changes in consumer demand preferences [2, 46]. After a decade of outsourcing and offshoring, international companies began to actively diversify their business strategies and use other options for structuring production processes accordingly. Reshoring began to be considered as one of the optimal forms of reorganized organizational structure.

The use of re-shoring in the organization of production activities of international companies has led to a reduction in global value chains and is clearly manifested in the reduction of international (primarily intra-corporate) trade. If the traditional global value chain can be represented as a «smile» curve with three mandatory elements: pre-production stage (R&D, product design and development, design), production and post-production stage (delivery to the end consumer)-with emphasis on the first and last stages where the greatest added value is created, since the second stage represents offshore production (Figure 2), then modification of value chains under the influence of additive manufacturing In additive manufacturing, the leading component of the global chain becomes the manufacturing process-3D printing.

There are comparative characteristic of the global value chain with (a) traditional production-solid curve, (b) complementary production (traditional, augmented with elements of additive manufacturing for rapid prototyping)-dashed, (c) additive manufacturing (3D printing)-dotted. In traditional and complementary manufacturing, the added value occurs in the pre-production and post-production stages. Additive manufacturing is the only production, from the point of view of modern global production, in which the leading stage of value-added creation is the production process, which is located in the organizing country and the coordinator of the global chain. G. Gereffi and H. Luo suggested that as assets become more intangible, firms require other skills and competencies, redrawing their value chain, they adopt other

internationalization strategies [4, p. 7].

The reallocation of the stage of greatest value addition caused changes in global chains, reduced them, and thus caused the tendency to regionalization of global production. So, the emergence of new technologies led to an unexpected effect-the slowdown of globalization, as companies overestimated the true benefits of internationalization [5, p. 157]. The empirical data presented in the UNCTAD World Investment Reports (2017 and 2018) confirm this conclusion regarding EU countries: EU global chains are strongly integrated within the community in the manufacturing industry globally they are less integrated than expected: they have a lower share of foreign suppliers of intermediate products and limited use of intermediate products when exporting to non-EU countries [6, p. 23].

The development of re-shoring based on additive manufacturing does not mean a complete and final change in the organizational structure of global value chains. In different sectors of the economy and even in the production of different products in the same industry there is always a choice between offshoring and re-shoring. Those attributes that distinguish additive manufacturing from subtractive manufacturing can be used as the main criteria for the choice of organizational strategy by an international company. There is no doubt that economies of scale, which determine the cost savings of production, both in terms of the use of (tangible) capital factors and the use of human capital, will be leading in the decision to move production abroad or to return it to the host country of the global chain. Thus, several production processes based on mass production will continue to use offshoring. However, in every industry with mass production, it is possible to produce exclusive (tailor-made or fashionable) products that require non-traditional production methods. The use of additive manufacturing techniques in the manufacture of such single products would create the conditions for bringing some production back «home» or to nearby countries.

Moreover, further development of the technical and technological component of production processes will bring to life new types of products whose production needs unconventional methods. The re-shoring of global value chains will thus expand and the trend towards regionalization of production will increase. OECD studies emphasize that the emergence of new technologies will make regional value chains more feasible: investment in industrial robots will make production at higher human capital costs possible, and because improved robotics will replace labour in more tasks, smarter robots will make labour costs in the overall cost structure of new products and production processes less relevant, resulting in a shift of production away from traditional manufacturing.

Factor price equalization between developed and developing countries, which has resulted from the involvement of several developing countries (e.g., Cambodia, Taiwan, China, Bangladesh, Malaysia, Viet Nam) in global value chains as offshoring entities, will also contribute to the increasing trend towards regionalization.

The trend towards regionalization of global production is intensifying against the backdrop of the trend towards globalization. Offshoring technologies, despite the increasing role of re-shoring, are still leading in the organization of global value

chains. Differences in the technical and technological bases of the production process, as well as the persistence of factor prices in developed and developing countries despite some alignment, and the rapidly developing markets of developing countries will act as incentives for offshoring to take root. Moreover, offshoring has helped to create a middle class in major developing countries and has ensured a relatively rapid growth of the solvency of their population, which is another prerequisite for their survival: proximity to markets that allow for the expansion of sales volumes, savings in transportation costs and customs duties are often crucial for a decision not to return to the country hosting the global chain or for a partial withdrawal. Emerging markets in China and India are now becoming one of the leading factors in strengthening offshoring in the organization of global value chains. As a result, the OECD believes that a regional rebalancing of several global chains looms on the horizon, making the topography of production more diverse and distributed: in addition to global chain hubs, production will increasingly be concentrated in regional/local hubs located closer to final markets in both developed and developing countries, so the right policies for future production and manufacturing will need to take these broader changes both in the region.

Ключові слова: Деглобаізація, регіоналізація, гобальні процеси.

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