

Proposed Solutions after COVID-19 for Supply Chains

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Abstract—The article is devoted to the analysis of the consequences and effects of the pandemic on the development of international trade in the context of the COVID-19, as well as the problems faced by supply chains and their severe transformation in the current environment. One of the key solutions to the normalization of supply chains is information and communication technologies, which are an integral part of innovation. This article includes an analysis of the literature on the subject and examines the various challenges that supply chains face on a daily basis. Moreover, a comparative analysis of scientific articles was carried out in order to analyze how the development of information and communication technologies and their implementation can facilitate and systematize logistics at the regional and international levels.

Index Terms—Supply chains, international trade, COVID-19, logistics, import-export

I. INTRODUCTION

The COVID-19 has brought the issue of supply chain flow management back to the forefront. Unprecedented, this crisis was similar to a “logistics crisis”. The stockouts, partial or delayed delivery at the beginning of the pandemic of certain commodities (raw materials for industries, surgical masks, intensive care beds, vaccine doses, etc.) suggested that the issue of flows, beyond the organizational dimension, also remains a question of geopolitics and the States.

The recent pandemic has highlighted the vulnerability of existing supply chains [1-5]. They are rigid and difficult to adapt. In the light of the crisis, a certain paradox could be seen in the expectations of the supply chain. The company expects from this sector an optimal optimization of its finances and anticipation, vision, where no other is able to see, which is a talent of orchestra virtuoso.

The article is devoted to the analysis of the consequences and effects of the pandemic on the development of international trade in the context of the COVID-19, as well as the problems faced by supply chains and their severe transformation in the current environment, through an analysis of the literature on the subject and examines the various challenges that supply chains face on a daily basis. A comparative analysis of scientific articles was carried out in order to analyze how the development of information and communication technologies and their implementation can facilitate and systematize logistics at the regional and international levels.

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II. PROBLEM DEFINITIONS

Over the past decades, China seems to have acquired a principality in the global supply system. Many countries and companies have developed a high dependency on the Middle Kingdom, making them partially or totally unable to produce without it. In the context of a stable world economic growth, although insignificant in recent years, the use of this scheme has created a double positive effect for many companies that, by investing their funds in the Chinese economy and thus significantly reducing production costs, have directed the sale of finished industrial products to countries where consumer demand is high. An analysis that we think is relevant to this by Bruce Jackson and Doug Morrow of the global consulting firm Sustain analytics notes that "in the context of economic and market globalization, corporate reliance on suppliers offering low-cost goods, including savings on factor and labor costs, has become a common practice." In 2001, China's share of world trade was 3% and today that figure is about 20%. High rates of production of new goods, as well as the formation of new needs, justify the speed and scale of obtaining new information, open new opportunities for the creation of a business, and in times of crisis - for its survival. Based on the paradigm of using information and communication technologies to do business, modern companies can achieve significant competitive advantages necessary for their survival by actively shaping a new virtual environment and creating a new structure for interaction and business in a new information environment [6–10].

Based on scientific articles, the main objective of this work is to evaluate how supply chains can adapt to the new conditions during a pandemic, as well as possible solutions to facilitate and stabilize the work of international transport to a new, faster level. Currently, a number of challenges have emerged in terms of the transformation of international trade, the further development of which will be a key issue for the recovery of the global economy. The extent to which trade can influence economic recovery depends on the development possibilities of export sectors and the recovery of target foreign markets. Because countries are closely interconnected through international trade channels, a decline in income in one country leads to a decline in its imports, which means a decline in exports for trading partners. The resulting disruptions in a country's supply of imported resources for production lead to a reduction in its exports to other countries. A decrease in resource imports means either a shift to import substitution or the emergence of a shortage of the resources that were previously imported. The need to rethink the supply chain seems to be necessary, considering the trends already developed in its evolution. These include trends associated with the digitization of trade, the use of new technologies in production and the endogenization of supplies. Based on scientific articles, the main objective of this work is to

evaluate how supply chains can adapt to new conditions during a pandemic, as well as possible solutions to facilitate and stabilize the work of international transport at a new, faster level.

III. LITERATURE REVIEW

In the modern world, the use of information and communication technologies in management processes has become widespread. Therefore, the impact of information and communication technologies on the efficiency of supply chains, especially in times of crisis, is an important issue of concern to practitioners and scientists. Yoon's study [11] examines the impact of innovation leadership and innovation in the supply chain in terms of efficiency using the example of a healthcare organization. The results of the article showed that leadership has a positive effect on innovation, which in turn improves the efficiency of the supply chain. The study also showed the relationship between supply chain innovation in terms of efficiency gains. Feng [12] discusses the factors that affect supply chain management efficiency, the purpose of this article is to explore the relationship between supply chain management approaches, business performance and environmental factors. The authors concluded that external and internal supply chain management methods make it easier for firms to increase market share and profits only when they are jointly implemented, increasing environmental efficiency and minimizing environmental risks, which is also important during a market downturn in a pandemic. Chorfi's article [13] presents a balanced scorecard and model-based framework for developing an integrated performance measurement system for public health supply chain management. This system of indicators can be adapted to the goals and preferences of the decision maker, which allows the most important indicators to be included in the formation of an integrated assessment. One of the central questions in organizing the supply chain is how to invest correctly [14–18]. This perspective in supply chain organization requires an understanding of the relationships between costs, supply chain risk factors, including in the context of global crises, and investment. This article proposes a multipurpose model for supply chain organization in the face of uncertainty. Risk sources are modeled as a set of scenarios, the goal is to explore the trade-offs between investing in improving supply chain capabilities and reducing supply chain risks, and minimizing the cost of supply chain disruptions. The study results show that supply chain empowerment can be seen as a mitigation strategy that allows a company to reduce the overall expected value of a supply chain prone to disruptions, including those associated with the COVID-19 pandemic. Liu's work [19] is devoted to the problem of optimal decision-making in the supply chain, the choice between centralized and decentralized solutions of manufacturers and retailers. The organization and coordination of the supply chain is considered in terms of a carbon tax. This paper discusses supply chain optimization in three ways: when considering a buyback contract, a subsidy policy, and a joint buyback and subsidy strategy under a carbon tax cap. Chen provides an example of one of the largest e-commerce

platforms in China to demonstrate how the online retailer is strengthening its competitive advantage in the precrisis environment using financing and supply chain collaboration techniques [20]. The authors of this study conclude that adopting supply chain finance practices helps the e-platform forge closer partnerships with supply chain partners and increase its competitive advantage.

The study by [21] analyzes the management of humanitarian supply chains using the example of India in a typical market situation, not complicated by supply chain crises during a pandemic. The authors [21] emphasize the importance of information and communication technologies. The results show that strategic and proactive planning is essential to expand the use of information and communication technologies in the management of humanitarian supply chains. The authors note that this can motivate participants to implement educational programs to raise awareness of the importance of information and communication technologies. These results also support the view that the role of government is critical to expanding the use of information and communication technologies. The article argues that an effective, transparent workflow policy associated with the use of a knowledge management system will maximize the benefits of information and communication technologies and further improve the efficiency of supply chains. Supply chain sustainability issues are explored in many works. For example, [22] see supply chain management as an organizational philosophy for achieving profit by reducing environmental risks and impacts while increasing factors of economic and social efficiency. Quality control techniques are used to improve the efficiency and quality of production and distribution across global supply chains [23–26]. The models proposed in this article can make the supply chain completely autonomous. In particular, information and communication technologies, applications, Big Data and artificial intelligence technologies can be used to collect data in real time to improve the interaction between suppliers and buyers and to simplify the redistribution of food, to connect farmers and suppliers with markets, and getting an immediate response in the event of a change in demand. Information and communication technologies can also be used during crop processing, postharvest processing, storage and transportation of products. Information and communication technologies are helping to monitor autonomous vehicles and agricultural drones to reduce human contact with food in agriculture. Supply chains based on the integration of industrial information (the concept of the integrated use of new information technologies such as 5G, Big Data, cloud services, wireless communication networks and artificial intelligence in the field of modern industry) have played a huge role in the delivery of materials for the prevention of the epidemic COVID-19. The use of information and communication technologies and the digital transformation of business are especially effective in times of crisis when enterprises are forced to use information and communication technologies. Such a supply chain relies on online platforms that can connect businesses with both raw material producers and customers.

Zhang's study [27] proposes to use the digital twin of the supply chain, a model that represents the state of the supply

chain at any given point in time and provides complete end-to-end visibility to the supply chain to improve resilience and contingency plans. The need and importance of supply chain digital twins became undeniably evident during the COVID-19 pandemic, when many companies had to quickly adapt the chain to existing and new suppliers and customers. Supply chain digital twins for fault management, which is a decision support system for managing outage risks that uses integrated fault risk modeling with modeling, optimization and analytics components. Thus, majority of authors emphasize the need and benefits of using information and communication technologies in supply chain management systems, especially in the face of disruptions in global and local supply chains. However, there are still few works that would investigate the impact of the used information and communication technologies on the efficiency of supply chains, as well as the information environment as a factor in increasing the efficiency, competitiveness and survival of business in the context of a pandemic, closed borders and quarantine restrictions of various levels.

IV. CONTENT-ORIENTED ANALYSIS

One of the most complex and serious challenges for the entire global economy in recent decades have been the spread of COVID-19. As the studies reviewed above show, the pandemic has a strong impact on transport systems and, in some cases, blocks access to supply chain logistics. In the past few decades, multinational corporations have carved up their manufacturing processes into small segments and relocated these small parts of the process to different industry locations around the world to maximize their profits.

To better understand the main content of scientific research aimed at helping stabilize and find new solutions in the supply chain, the articles provided above should be divided into three groups depending on their main focus. The first group focuses on analytics and the search for new solutions to provide stable and timely logistics, which is very important for the supply chain. When any part of the chain is blocked, all subsequent production activities are affected. For example, in Japan, car production suffered due to the fact that some parts could not be delivered on time and stocks were not maintained due to the lean manufacturing system. As the countries used different models of dealing with the consequences of the COVID-19, measures to support various sectors of the economy and border control, the volume of cargo transportation was significantly reduced. As a result, supply chains have been severely disrupted.

The second group aims to study and analyze how the pandemic is affecting global value chains. In addition to supply chain disruptions, other measures that have been taken, such as the closure of jobs and public transport stops, have significantly limited the labor cost of production.

The third group focuses more on how the pandemic affects global value chains and this leads to a sharp drop in demand. In January and February 2020, when China was the epicenter of the global epidemic, the drop was not significant. However, since March 2020, when the virus spread around the world, this has led to a sharp drop in demand. The main factor behind

the catastrophic decline in aggregate demand in the world economy was the global one-time cancellation of orders. This channel has transmitted the shocks from the pandemic to regions such as Africa where the pandemic has not yet broken out. Orders from the northern part of the world were mostly canceled, commodity prices fell by an average of 20%, and total trade fell by 50%. Dividing articles into several groups helps to see that there are many more problems in the supply chain than it might seem at first glance. One problem inevitably entails many other problems at the international and regional level.

V. METHODS

Taiwan and four countries of the European Union (Germany, France, Italy and Great Britain) are the most dependent on the supply of Chinese goods. Also, this dependence is significant for countries such as Korea, Mexico, Turkey, Japan, Brazil and the USA. The development of the global transport system, the almost universal introduction of a "pull" supply system has led to a significant acceleration in the movement of material flows between countries and continents, and has also made it possible to significantly reduce costs per unit of goods.

Globalization has made it possible to locate production around the world and deliver goods to the market at the last second. This reduced storage costs, and stocks that lay on the shelves for more than a few days were considered errors and waste. Thus, the globally thought-out logistics system became the source of the offer.

The coronavirus pandemic has had a significant destabilizing effect on this system of global material flows. At the beginning of 2020, disruptions in production processes began in a key link in the global supply chain - in China. Beijing has implemented a range of measures to curb the spread of the disease, including the complete lockdown of 16 major cities, which are home to about 50 million people.

In China, the industrial region of Hubei has become the epicenter of the spread of COVID-19. This is partly why industrial sectors such as automotive and mechanical engineering were the first to suffer from the coronavirus pandemic. According to China, industrial output for January February 2020 decreased by 13.5% compared to the same period in 2019. It is important to note that China is the largest producer of engineering products. The closure of Chinese factories means the destruction of supply chains. This complicates the search for suppliers of components for production, including high-tech products. This situation was significantly aggravated by the difficulties that arose in the transport system and the drop-in cargo turnover in the country's leading ports. Since March 2020, China has been able to stop the spread of COVID-19 and begin to gradually restore the operation of its enterprises. But the wave of the corona virus pandemic swept through European countries and the United States, where a rapid decline in industrial production and, accordingly, demand for Chinese goods began. The situation was significantly complicated by the emergence of new and expansion of existing barriers in the process of moving goods in European markets, which was

associated with the introduction of sanitary control between countries, with the reduction of checkpoints at the borders between the EU countries and other countries, the growth of transport costs and many other factors. The emergence of "borders" within the EU also

affected delivery times. "In Europe, checkpoints have appeared, at each of which checks are carried out" [11]. The complexity is added by the fact that due to the resulting delays, the tariffs for road transportation have also increased by 10-15%.

Depending on the scale and duration of the coronavirus pandemic, one can draw conclusions about a serious disruptive process taking place in the international supply chain. Many experts rightly argue that not only will it not recover after the end of the pandemic, but it will be significantly transformed. The fundamental shock to the global financial and economic systems is a testament to how vulnerable global supply chains are. The coronavirus pandemic will thus not only have long-term economic repercussions, but will also lead to fundamental changes. COVID-19 has proven that pathogens can not only infect people, but also poison the entire global trading system.

Already today it is becoming clear that cost minimization as a factor determining the configuration of the international supply chain and the important role of China as a starting point for the formation of material flow in the global supply chain, due to huge risks, will be reconsidered. According to experts, "as a result, we may face a new stage of global capitalism, which includes the reduction of supply chains, the transfer of production closer to markets and the filling of warehouses with excess stocks. This will reduce the profits of companies in the short term, but will make the entire system more reliable." Another long-term trend may be the localization of supply chains as a trend opposite to their globalization. In this situation, many companies - consumers of products coming from China, began to spontaneously restore replacement production, trying to prevent disruptions in the production process. As noted by the renowned British magazine *The Economist*, "US officials are considering directives to encourage the location of the supply chain in the pharmaceutical industry in the US. While this decision risks disrupting existing trade ties, it is in line with a trend that began to take shape last year and is reflected in rising import barriers. India, for example, has already begun to reduce its dependence on API supplies from China as a result of expanding its own production. In 2019, the South Korean government announced the launch of a plan to localize the production of key intermediate industrial products in connection with restrictions imposed by Japan on their export." (<http://www.eiu.com>)

Such a response to force majeure circumstances, due to inefficiency and significant cost, will most likely be short-term, but a certain localization of supply chains will still be carried out, especially in relation to those industries that are related to ensuring national security and reduce the risks associated with the onset of situations similar to the coronavirus pandemic. Today, this is especially true for products that are important to human health, as "a localized supply chain, especially in pharmaceuticals, will provide security for governments and companies, will have a positive

effect on the environment and will improve product quality and provide flexibility. in times of global uncertainty." According to foreign experts, the consequence of the pandemic will be that many companies will want to know more about supply chains and will make a choice between efficiency and availability / stability of work. If governments intervene, requiring so-called strategic industries and enterprises to have contingency plans and appropriate reserves, profitability will fall, but economies will become more stable [28].

Of particular importance in the current difficult situation is ensuring the stable functioning of supply chains for those goods that are especially in demand in a pandemic. So, in Russia, a list of essential goods in the context of a pandemic has been formed. There are 23 items on this list: baby products, detergents, toiletries, personal protective equipment, medical devices and disinfectants, pet products, gasoline, diesel fuel, gas, auto parts, electrical equipment, cable products, household appliances, computer equipment, gardening items, construction tools and materials, sanitary ware, firefighting supplies, printed media, matches, candles, funeral accessories, glasses and lenses, tobacco products, as well as goods related to the distribution of goods.

Many countries are striving not only to significantly increase the production of these goods, but also to increase the level of provision with them as a result of imports from other countries, which should be facilitated by liberal trade policies. For example, World Trade Organization Director General Roberto Azevêdo notes that in the field of trade policy, WTO members including the United States, China, Colombia, Canada and Brazil have introduced dozens of measures aimed at facilitating trade in medical products related to the COVID pandemic, including as a result of a decrease in the number of import procedures (reduction of import duties), a decrease in administrative barriers. Such actions increase the availability of these goods for the population [29].

VI. RESULTS AND RESILIENCE AXIS

A. Results

Thus, a new trend in international trade is the desire to remove restrictions on the movement of those goods that are especially significant in the context of the coronavirus pandemic. An example would be the actions taken by the Eurasian Economic Union – EAEU.

- 1) The Council of the Eurasian Economic Commission (hereinafter referred to as the EEC) adopted a decision that provides for the exemption from import customs duty of goods imported to prevent the spread of coronavirus infection in the territory of the EAEU from 03/16/2020 to 09/30/2020. The decision applies primarily to personal protective equipment, disinfectants, diagnostic reagents, certain types of medical equipment and materials. Import with exemption from payment of import duties is carried out on the basis of confirmation of their intended purpose by the national authorized bodies in the field of healthcare.
- 2) The EEC Council approved the list of critical import goods for which a tariff exemption is provided in the form

of exemption from import customs duties when imported into the EAEU member states for the period from April 1 to June 30, 2020 inclusive. The list of these goods includes certain agricultural and food products, as well as certain finished medicines and medical products (endoscopes, contactless thermometers, disposable pipettes, mobile disinfection units), and the list of goods used for the production of medicines has also been expanded. medical supplies, as well as medical products (thermal bags, films for sealing vials, medical freezers), the import of which in the period from March 16 to September 30, 2020 is carried out duty-free, subject to confirmation of the intended purpose of such goods by authorized bodies in the field of healthcare.

- 3) The current procedure for issuing form a certificate of origin issued by developing and least developed countries has been simplified on a temporary basis. The adopted Decision will allow using a paper or electronic copy of certificates for six months and not presenting their originals during customs declaration. These changes are valid from April 18 to September 30, 2020.

In addition, in order to speed up the movement of these goods in the EAEU, the issues of ensuring the uninterrupted operation of transport freight traffic are being addressed in order to support the sphere of material production and services on a returnable, but preferential basis. But it is also impossible not to note the reverse trend associated with the desire of some countries to limit the export of products that have knowledge in the context of the coronavirus pandemic in order to provide the population of their country with it. As Roberto Azevêdo notes, there are other measures that hinder the movement of medical goods, taken by some countries, "other measures, including those taken by some of the countries mentioned above, slow down trade. Such measures include export restrictions imposed by the governments of some countries on medicines, protective equipment, and ventilators in order to increase the degree of provision of their population with them.

B. Resilience Axis

The advent of globalization has interconnected the world's economies and strengthened the interdependencies of the world's geographical points. This model has demonstrated economic performance in recent decades, but also its weaknesses in crisis situations. COVID-19 illustrates this. The weight of China in the world economy which is about 20% of the world economy and 66.67% of the world trade shook the economy and the supply sector during the pandemic (IMF Data manager). Indeed, COVID-19 led to a decline in Chinese supply, which generated a collapse of exports of industrial products from China. The transport network such as maritime and air paid a high price through a drastic decrease in the transport offer. The repercussion was felt on the rates of container and cargo transport. Weakened, it appeared a great dependence of many states with the Chinese suppliers. Dun and Bradstreet (dnv.com) estimates that more than 5 million companies worldwide have at least one direct supplier located in China.

In order to achieve supply chain resilience, a lot of thought has been given to the ways in which the supply chain can be

resilient in a crisis situation. A quick search on the Google scholar search engine mentions 341,000 results, which demonstrates the importance of the subject.

Among the axis mentioned by the researchers, 4 of them have particularly retained our attention with regard to the characteristics of the supply chain problem during the covid.

Firstly, combining reactivity with efficiency based on health and safety factors that are different from traditional situations such as market fluctuations seems essential to build reactivity in demand and efficiency in supply, an indispensable element in situations of uncertainty. In order to implement it, several issues can be mobilized.

The production endogenization axis. Valérie Rabassa believes [30] that the supply chain must be built to get closer to consumers and customers by having a secure approach and diversifying the suppliers present in the various components of the value chain. The author uses the example of Rexel and Schneider Electric, which have moved up a gear in the development of a new design for subregional sourcing following COVID 19 to counteract disruption situations. Like the private sector, administrative bodies such as the EU and the French government have called for the relocation of industrial production of products such as pharmaceuticals and industrial products. Indeed, nearly 80% of pharmaceutical ingredients are produced outside the EU and 80% of printed circuit boards from China (www.usinenouvelle.com). The alternative of endogenous production in many respects is an avenue examined by several countries in their economic policies to increase the resilience of companies in crisis situations and reduce dependence. Japan, for example, has undertaken a policy of securing its industrial supply chains, which are heavily dependent on China, by allocating a budget of more than 2 billion euros to encourage Japanese manufacturers to relocate production in Japan.

The supply chain 4.0 axis. The use of artificial intelligence and connected objects, and robotics is proving to be an avenue to consolidate the resilience of the supply chain in crisis situations according to Refs. [30–33], it improves the responsiveness and efficiency of the supply chain. Whether it is on the aspects of production time monitoring, inventory management, logistics, last mile delivery and maintenance, new technologies are proving to be a first line ally to reinforce the resilience of the supply chain. The example of Chinese retail giants JD.com and Alibaba (hbr.org) who implemented during the pandemic a robotization of their warehouses, delivery by drones, and secure boxes with direct access announce the maturation of a new resilient, strong and autonomous supply chain: the supply Chain 4. Christine Lagarde, head of the European Central Bank, predicts a shortening of the supply chain by 35% and an increase in industrial robotization of more than 70% after COVID-19 (www.usinenouvelle.com). In fact, a resilient supply chain in times of crisis seems difficult to achieve without exploiting the technological potential.

Geographic diversification of supply sources. While we agree with the researchers on the benefits of endogenization of production, it remains that this is only possible for certain products. To quote Aurélien Rouquet (www.theconversation.com), "If certain strategies can be put in place to

reduce an excessive dependence on certain countries (...), COVID-19 will certainly not bring crude oil from under French soil. Indeed, the dependence of states on raw materials such as mining is difficult to eliminate. However, one of the solutions to combat the dependence on a state is to diversify the sources of supply. Taking the example of recent events in Eastern Europe, the Russian state could have seriously impacted the EU in the suspension of the supply of its gas resource. But, not being the only country with this resource, the impact on the EU seems to be reduced. The geographical diversification of suppliers is therefore necessary on the one hand for a resilient supply chain and on the other hand to prevent a state from using its position as a supplier to influence the various geopolitical issues.

Beyond these axes, the management. Samuel *et al.* [34] believe that the management aspects are decisive in the resilience of the supply chain. For them, digitalization is a major asset for the supply chain, but the good management of its integration, adoption is those that can guarantee a digital maturity to the supply chain, something essential for it to serve its resilience. They justify their position based on a 300-question survey of vice presidents, directors and managers of supply chains, working in companies of various sizes in many industries. Digital maturity has a significant impact on the level of adoption of digital tools. The same study reveals that digital maturity has a strong impact on supply chain resilience. It seems that the digital tool can only allow the supply chain to be fully resilient and meet the expectations in crisis situations if it is accompanied by adequate management [35–40]. Couldn't we underpin the same conditions for the other supply chain resilience axis mentioned above?

VII. CONCLUSION

As noted above, the introduction of digital technologies affects the forms and methods of doing business, leading to an inevitable transformation of all processes and areas of activity. The importance of using information and communication technologies to preserve and restore supply chains impacted by the COVID-19 pandemic and related quarantine restrictions at various levels cannot be underestimated. Numerous publications on supply chain management confirm the active and ubiquitous use of digital technologies to improve the efficiency and survival of business in the face of disruptions in global and local supply chains. The field of supply chain management has evolved rapidly, driven by factors of globalization, innovation, sustainability and technology. Qualitative research has been carried out in the literature on this topic. Despite the fact that many of the activities affecting the efficiency of logistics, such as international infrastructure, trade corridors, rules and services, have already been thoroughly analyzed by many researchers, the issues of assessing the role of information and communication technologies in improving efficiency and restoring supply chains have acquired new relevance. Pandemic, closed borders, increased sanitary and hygienic requirements and quarantine measures of various levels of severity have destroyed many supply chains that have been

built over the years. As a result, it can be concluded that the importance and prospects of using information and communication technologies are increasing in advanced economies, where digitalization allows achieving high efficiency indicators and restoring supply chains. Thus, the disruptive processes taking place in the global supply chain are likely to lead to profound and lasting changes in international logistics. They will be characterized by a combination of further globalization of production and marketing of products with an increase in the importance of the localization of those industries that are essential for maintaining national economic security and sustainable development. The supply chains associated with pharmaceutical and medical products will undergo particular changes. According to the criterion of the significance of these products for ensuring the health of the population of each individual country and the need to certify its quality, localization in the production of these products is likely to be the highest. And, despite the fact that many countries have encountered contradictions in ensuring the free movement of goods of this group, the EAEU member countries have all the prerequisites for integration cooperation in resolving this vital issue.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Lu, Chertenko and Bassane conducted the research and wrote the paper. Taghipour has supervised the research. All authors had approved the final version.

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