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*Research article*

# China and deglobalization of the world economy

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**Abstract:** This paper analyses the causes of the downward trend in three key cohesion aspects of the world economy: international trade, foreign investment and global value chains. The paper shows that the causes of these trends are not cyclical, but structural; that is, it is the process of deglobalization of the international market, and transformation of the very foundation of the international economic system is underway. The specific aim of the study was to investigate the impact of current trends on China's economy. The question is whether the Chinese economy, which has developed due to globalization processes, will be negatively affected by reverse processes, and to what extent. To capture the short-run effect of globalization-related factors on China's economy, an autoregressive distributed lag (ARDL) model was used. For estimation of the long-run linkage, the ARDL bounds testing approach to cointegration was launched. The results of testing the short-term effects showed that the new Chinese development strategy, aimed at protecting domestic economy from external disturbances, has produced excellent results. Significant changes in the Chinese development paradigm, as based on domestic production to meet domestic demand and financed by internal resources, have led to a decrease in the share of all international indicators in the Chinese economy. This is shown by both the statistical description of changes in the globalization-related variables, and it is confirmed by the results of conducted empirical research. Testing of long-term relationships has given conflicting results, so it is not possible to identify the long-term impact with certainty. Nevertheless, the parts of bounds testing that are statistically indisputable indicate a long-term, strong cumulative impact of these variables on the Chinese economy, while the direction and intensity of the action of individual variables are unpredictable. A new paradigm enables China to take a better international position as a global investor instead of a recipient of investments, to take over growing parts of global product chains instead of being their production link and to initiate a new form of globalization in the Chinese way.

**Keywords:** deglobalization; China; protectionism; international trade; foreign investments; foreign value added; global value chains

**JEL Codes:** F62, F68

## 1. Introduction

Economic globalization, defined as the integration of the international market of goods, labor and capital, was the most significant developmental force in the second half of the 20th century. It evolved at three interdependent levels: international trade, international investment and international production. The intensification of these economic activities has produced different effects in different parts of the world, economic sectors and population groups, depending on the degree of involvement in international flows. The biggest winners of globalization are generally Asian countries. In addition to China, as the most successful economy in recent history, the positive effects of globalization are significant in South Korea, Singapore, Hong Kong, Thailand, the Philippines, Vietnam, Indonesia and India. Successful examples of Asian economies, along with intensive growth in foreign trade and foreign investment globally, have led to a rather overstated notion of the reach and nature of globalization. Contemporary globalization is considered as a spontaneous process of the integration of national economies into a world economy.

This paper argues that globalization is not an irreversible process, that modern globalization process has come to an end and that processes of deglobalization are leading to a significant transformation of the international economic order. The specific aim of the study was to investigate the impact of deglobalization processes on the Chinese economy. Given that China's rise from poverty to the world's largest economy has been driven by globalization processes, the question is whether reverse processes will negatively affect the Chinese economy, and to what extent.

The paper is divided into four chapters. After the Introduction, the second chapter gives an overview of the literature that addresses the possibility of economic deglobalization, as well as explores current trends of weakening global economic integration.

The third chapter analyzes current declining trends in all key aspects of economic globalization: foreign trade, foreign direct investment (FDI) and global value chains (GVCs). We have tried to answer the following questions: What are the causes of declining trends in globalization processes? Are they cyclical (transient) by nature? If not, is this a sign of deep structural changes in the world economy, which can be considered as an early stage of deglobalization?

In the fourth chapter, we analyze data on the dynamics of Chinese indicators of all key indicators of international economic flows: imports, exports, FDI inflow, FDI outflow and foreign value added (FVA), which shows participation in GVCs. Their dynamics point to a shift in China's developmental strategy from "opening up" to "going out", and then to another change in the developmental paradigm, which is indicated by a sharp decline in the share of all international indicators in China's GDP, which, according to the data, can be traced back to the World Financial Crisis in 2008.

These indicators appear in the fifth chapter as dependent variables in the empirical analysis, whose goal is to explore the effects of declining trends in global foreign trade, FDI and GVCs on the Chinese economy. This is a kind of test of the success of an altered Chinese developmental strategy.

## 2. Literature review

The term deglobalization was first used by Walden Bello in Bello (2005). Bello did not consider deglobalization as an ongoing phenomenon since the integration processes were at their peak in 2005; but he proposes deglobalization as a process that would completely change the existing model of global economy governance.

Several authors consider the possibility that economic globalization is a transient process: Frankel (2000), James (2001, 2017), Baldwin and Martin (1999), Williamson (2002), Obstfeld and Taylor (2002), Sachs and Warner (1995) and Taylor (1996). They put this phenomenon in historical perspective by comparing it with the equally intense integration process of the world economy at the end of the 19th and the beginning of the 20th century. The similarity between the two waves (the term of Baldwin and Martin, 1999) of globalization is great both in terms of political will and economic indicators. Evidencing great similarities with the earlier process of globalization, the authors point to its transience and open the possibility that the process could be interrupted again as it happened in the 1930s.

Contemporary declining trends in the international economy have been explored by Constantinescu, Mattoo and Ruta (2015), Lewis and Monarch (2016) and Boz, Bussière and Marsilli (2015). These authors concluded that a decline in international trade cannot generally be explained by cyclical economic factors. Although these studies do not consider changing the mainstream of the world economy, they constitute a significant starting point for this work, as they reliably eliminate many phenomena that could potentially lead to a temporary reduction in the volume of foreign trade.

Very few authors have analyzed the broader context of current changes in the international economic system. Despite the undivided view on the slowdown of the world economy integration, these authors have very different perceptions of the future direction of a change. Bordo (2017) noted widespread changes in the world economy: a decrease in the volume of foreign trade and foreign investment, the withdrawal of GVCs and an increase in regulation, but he concludes that it is a break in the process of global integration, not the end of the process. In contrast, Jacoby (2018) and Evenett (2019) analyzed the current trend of mass trade protectionism, which they consider to be a symptom of serious disturbances in the international economic system and the beginning of deglobalization.

Ramo (2004) thinks that the nature of globalization is changing, with China taking the leading position in the world economy. He defines the term Beijing consensus as opposition to the once-dominant Washington consensus. This concept has gained a significant number of supporters. Joshua (2019) believes that there is a "strategy shift occurring between the Washington Consensus and the Beijing Consensus", and Henderson et al. (2013) point to a new form of globalization with "Chinese characteristics".

## 3. Deglobalization trends and their causes

### *3.1. International trade slowdown*

International trade was the most important aspect of global economic integration. Since the 1960s, the share of foreign trade in the world economy steadily increased until the Global Financial Crisis (GFC). With an average share of 24% in 1960, it exceeded half of the world GDP in early 2000s and reached a historic high of 61% in 2008 (World Bank). In 2009, the GFC stopped the rapid growth of

international trade. In the two years following the crisis, the volume of foreign trade was temporarily raised, but then further decreased so that, even a decade later, it had not reached the level from the previous period.

The current slowdown in foreign trade has a few specifics that indicate serious structural changes in international trade. Previous periodic reductions in foreign trade were short-lived, usually one to three years. The current downtrend has been ongoing for a decade.

Further, the causes of the slowdown in trade are generally cyclical in nature, such as the weakening of export economies or falling prices in the international export market. The current one cannot be explained by such cyclical factors, as indicated by the results of several empirical studies on the current trade slowdown. Constantinescu, Mattoo and Ruta (2015) found that only half of the decrease in international trade volume can be explained by the weakening of economic activity, that is, a decrease in GDP. Lewis and Monarch (2016) tested the possibility that the decline in trade volume was a reflection of a weakness in certain sectors of the world economy. Their model analyzed imports as a function of consumption, real exchange rates and investment in the sample of several major economies. The results also show that the decline cannot generally be explained by the weakening of economies. The econometric model set by Boz et al. (2015) showed that common cyclical factors, such as falling prices and declining demand and imports, altogether make up less than a half of the sources of trade decline. The results of these three studies together capture all potential cyclical causes of international trade decline. They show that cyclical factors have a role to play, but, neither individually nor collectively, do they explain much of this trend.

A phenomenon that could explain a significant part of the process of weakening global trade is the sudden rise of protectionism, which is a third specific of the current trade trend. It particularly points to deeper changes in the world economy. A growing tendency to protect national economies from the environment rather than integrate into it reflects an important structural change in the international trade system. The weakening of economic activity during the GFC initiated a number of restrictive trade measures of developed and developing economies. A number of measures, such as increasing tariffs, imposing quantitative restrictions and tightening customs rules, escalated in the period of 2008–2018. The World Trade Organization (WTO) states the following as a general feature of foreign trade: during this period, trade tensions continued to dominate the headlines and added to the uncertainty surrounding international trade and the world economy. The previous period saw a record level of new restrictive measures introduced (WTO, 2019, p. 2). Import restrictions imposed between October 2017 and May 2019 covered over US$800 billion (WTO, 2019, p. 23). The coverage of new restrictive import measures introduced by the G20 economies during this period was three and a half times higher than in 2012, since the WTO calculates the coverage of trade restrictions (WTO, 2019, p. 2). According to the WTO, the total number of new trade-restrictive measures introduced in those seven months was 38. According to the Global Trade Alert (GTA), which includes trade remedies, the number of these measures is far greater. According to the GTA, the number of new restrictive measures is more than 1,000 each year, or more than 2,000 measures in 2018.

The expansion of foreign trade restrictions began after the GFC. Several key trade routes have been suspended by a series of restrictive measures since as early as 2012–2014. These are Russia's trade restrictions on the European Union, North America and Latin America, and then the sanctions imposed by the EU on Russia in response to the annexation of Crimea. All of these restrictions are still in place.

The culmination of this trend was a trade war between the USA and China, which marked the international trade in 2018 and 2019. The new policy of USA's then-president Donald Trump meant

strengthening domestic production by imposing extensive import restrictions. Tariffs for solar panels, washing machines, steel and aluminum were among the first measures that cost the Chinese economy millions, although they also affected other exporters of these products to the USA market. A series of import restrictions aimed directly against China followed. Responding to direct bans on Chinese goods, there was a Chinese restriction on imports of USA goods. China has imposed high tariffs (15–25%) on imports of USA cars, aluminum, aircraft, pork, soybeans, fruits, etc.

The trade war of the two largest economies of the world has significantly affected the overall volume of international trade and contributed to a general loss of confidence in international institutions and liberal principles of the world economy. Yet, Trump's protectionist policies are merely a superficial reflection of a deeper and longer structural process of changing the direction of global integration.

At the end of 2019, the countries most affected by the restrictions were China, with over 6,000 restrictions, Germany with more than 5,000, followed by Italy, the USA, France, the United Kingdom, the Republic of Korea, Spain and the Netherlands with about 4,000 restrictive measures (according to the GTA). Trade restrictions constitute one of the causes of the weakening of foreign trade, not only by direct losses, but rather through a change of the entire trading environment in the world economy. The marginalization of international trade rules undermines the authority and role of the WTO on which the global trade system is based. A passive role of international institutions in these cases, in some opinions, points to the need to reorganize the WTO. According to Jacoby (2018), a redesign of the International Monetary Fund, the World Bank, the G20, the WTO and "all other institutions responsible for monitoring trade and assuming the responsibility of actors" is necessary (Jacoby, 2018, p. 60). Evenett (2019, p. 15) points out that the WTO tends to mitigate the state of trade restrictions in its reports by not including the mentioned trade remedies in harmful restrictions since 2017. The weakness and crisis of the WTO is particularly highlighted by the fact that, in 2019, the United Nations adopted the Convention on International Settlement Agreements (Singapore Convention on Mediation), and thus established a parallel model for trade dispute settlement, which is already under the authority of the WTO. This United Nations act is probably not an act of deliberately devaluing the WTO, but a reflection of the real need to end concrete disputes.

### *3.2. Reduction in foreign direct investment*

As in the case of international trade, the growth in FDI, uninterrupted over two decades, halved during the GFC. For the three years (2016–2019), the flows of international capital were decreasing sharper than those of international trade. FDI experienced the fastest growth in the 1990s, due to the opening of many new markets in the former Eastern Bloc. The FDI volume increased at a rate of over 20% per year (UNCTADstat database, 2019). Since the 2001 recession in developed economies due to the GFC, the average FDI growth had been 8%, and, in the period after the WFC, only 1%. According to data presented in the annual UNCTAD reports for 2018 and 2019, FDI in some regions was at a record low. FDI decreased by 23% in 2017 and an additional 13% in 2018, falling to less than US$1300 billion, which is the lowest level of FDI since the GFC.

Several early abrupt reductions in FDI, as in the case of trade, were the result of the economic recession in the EU and the USA. The declines in economic activity in 2001 and 2007–2009 were cyclical, and, as expected, FDI quickly reached and exceeded the previous level after the emergence of large economies from the crisis. The current decline in foreign investment is not the result of any crisis. Economic growth has slowed globally, but it is still growth, and no major economy is in

recession. Thus, deeper causes of FDI fall must also be sought, and the starting point is to determine the origin of FDI that is largely adding to the downward trend. Developed countries have a huge share in the total FDI inflow, so changes in investment flows in developed countries show almost identical changes to global flows. The inward FDI in developed countries had fallen by 27% in 2018 (UNCTAD, 2019a, p. 2), and it fell to the level of around USD1400 billion, which is what they were before the World Financial Crisis. The inflow of FDI into Europe has halved, with some countries registering a negative inflow as a result of the withdrawal of investment funds by USA multinational companies (MNCs). Outward investment from developed countries, with a 40% decline in 2018, plays a key role in the overall FDI outflow decline. Their share in total investment dropped to 55%, which is the lowest share ever recorded (UNCTAD, 2019a, p. 2–3). Investment originating in developing countries has also been reduced, but to a much lesser extent, i.e., by 10%. These data shall be used later to explain China's role in global capital flows.

Temporary return of capital to foreign markets in the aftermath of the GFC indicates that there were still profitable opportunities, and that foreign investors partly regained confidence in the stability of the world economy, or at least in the stability of the economies of the countries where they invested. The decline that followed indicates that at least one of these incentives for attracting FDI has changed.

After several decades of intensive capital investments, the global financial market reached saturation. Profitable opportunities for new investments were simply exhausted. In addition, due to the "law of convergence", the openness and connectivity of globalized economies led to the equalization of labor prices and production conditions in developed and developing countries. Globalization itself has provided a rise in labor prices in the most attractive destinations of foreign capital, i.e., the countries of East and Southeast Asia, thereby depriving them of a key aspect of attraction for FDI. Both of these phenomena are "natural" limitations of globalization, but both are of relatively lasting character.

Trust in investment security, as another important condition for FDI, is severely disrupted by restrictive policies of large economies. The number and scope of restrictive measures in the area of foreign investment have had a pronounced upward trend since the WFC. Restrictive measures include a number of instruments, which have negative effects on FDI in different ways. The most direct measures concern the restriction or prohibition of the inflow of foreign investment in certain economic sectors, but there are also restrictions on outward investment in certain foreign countries or sectors. The states that are home to the largest MNCs are intensifying their efforts to reduce and discourage capital outflows. Such measures have been adopted by the Committee on Foreign Investment of the USA, the European Commission, Germany, the United Kingdom, Italy and China.

The total number of restrictive foreign investment measures introduced in 2018 alone is 418 (according to the GTA). According to UNCTAD (2019b), the share of restrictive measures in total measures related to FDI increased from 10% to 34% during the period of 2003–2018; that is, measures contributing to FDI liberalization were reduced from 90% to 66%. This is the largest restriction share since 2003. In addition, in 2018, 22 business projects that had been started with foreign capital were blocked, which is twice as high as in 2017 (Hanemann and Lysenko, 2019, p. 15).

FDI is generally considered positive for the economy of the host country, so restrictions in this volume are unexpected. Investment restraints are common in national security sectors and, often, in the energy sector. However, since the WFC, the number of protected sectors has increased, encompassing some of the most profitable services and products. Most new measures relate to investment restrictions in the fields of telecommunications, the Internet, the production of electrical

components (semiconductors, diodes and transistors), robotics, artificial intelligence, IT systems used in key industries, etc. (UNCTAD, 2019b).

Particularly frequent is the introduction of screening as a mandatory assessment of the inflow of foreign investment by an authorized agency. This mechanism was introduced by 24 countries, which, together, account for more than a half of the world's cumulative FDI. Also, more than 40 amendments to the list of sectors or economic activities subject to screening were adopted in 2018 and 2019.

Direct impact of new restrictions on the total volume of FDI cannot be quantified. They are, to a certain extent, a direct cause of the decline in FDI; but, more importantly, they create an unfavorable investment climate, which, in the coming period, will contribute to further disinvestment.

### *3.3. Deconstruction of global value chains*

One of the key aspects of modern globalization is the international segmentation of production processes. The goal and driver of international production segmentation was to achieve the most cost-effective structure for each stage of the production process. This is the core activity of modern MNCs. Almost all exporting companies, with or without the participation of foreign capital, are parts of GVCs, also called production chains or supply chains. In its broadest form, globalized production is seen as a global production network, i.e., a grouping of interconnected but geographically dispersed production units. Global production networks have become a dominant feature of the modern world economy. One-third of total international trade takes place between global corporations, and another one-third within their GVCs, meaning that most global exchanges take place within global manufacturing networks.

The flow of inputs within GVCs cannot be measured by even the most accurate foreign trade data for a given group of products between countries involved in their production. Namely, statistics always show the final value of an exported product, not considering that the value of the import of components for that product is only slightly lower (for added value) than the value of the exported product (Stanojević and Kotlica, 2018, p. 26). For more complex final products, it is not uncommon for a product to cross several borders, or the same border several times at different stages of production. Trade statistics, at each transit, record the entire value of the product. External trade data have thus become overdimensioned. Instead of this data, the indicator of economic integration in international production is FVA. The FVA is the value of an imported semi-finished product that is ready for further processing and export. These data are collected by the OECD (Trade in Value Added database), World Input-Output Database and UNCTAD-Eora GVC database by using partially different methods. In this analysis, we have used UNCTAD data, as it relates to the most recent period.

From 1990 to 2010, the rise of share of FVA in exports was gradual, i.e., seven percentage points in 20 years, but it was steady, without interruptions (UNCTAD, 2018, p. 22). FVA, like most economic indicators, fell sharply in 2008 and 2009 due to the WFC. As in the case of foreign trade and investment, there was a temporary, moderate recovery of FVA, and then, for no apparent reason, it has been declining since 2015 in a large number of countries. FVA was globally reduced over 10 years from 31% in 2008 to 27% in 2018. UNCTAD (2019b, p. 2) estimated that stagnation or a slight decline would continue in the coming years.

The host countries of the largest MNCs, i.e., the USA and the United Kingdom, are also facing a steady decline in FVA, as is Germany, whose international production is mainly taking place in the EU's neighborhood, with negligible share in Asian markets. In the years after the GFC, FVA share in

USA exports decreased from 12 to 9.5%, in the United Kingdom from 33% to 26%, in Germany from 52% to 43% and in France from 38% to 33% (author's calculation).

The shortening of GVCs was caused by the same causes as the decline in trade and FDI. MNCs are retreating into national contexts, partly because of the global market volatility caused by the GFC, and partly due to the mentioned changed conditions, which no longer provide extreme profits. With the convergence of international input prices, too long of a GVC no longer justifies high transportation costs. Extraterritorial production may still be justified for lower taxes or geographic proximity to the market, as classical motives, but GVCs have actually become regional value chains.

## 4. New China developmental strategy and deglobalization

China's policy of "opening up" during the 1980s and 1990s related to opening the country for the inflow of foreign capital into China, as well as to exporting Chinese products. The success of this reform has provided China with huge capital surpluses. The Chinese government decided to use it for the promotion of Chinese investments abroad, and it initiated a new "going out" policy at the beginning of the 2000s. An important segment of the new strategy was focused on changing China's position as a major capital importer to one of the largest international investors. New large-scale Chinese investments were placed across Africa and Latin America in the next period. Relying on exports and expanding export markets remained a part of this developmental strategy.

The GFC hit the Chinese economy significantly in 2008 and 2009, pointing to its fragile position of dependence on international economic flows. This considerably accelerated the implementation of and extended a new Chinese strategy. Changing China's developmental strategy marked the beginning, but also, in part, the cause of the deglobalization of the world economy. The difference with the "going out" strategy is abandoning exports as a primary growth driver and focusing on domestic demand. Rapid trade growth over the two and a half decades peaked at 63% of Chinese GDP in 2006. Because of the change in export orientation, the share of foreign trade in GDP started to decline in 2007, and it sharply fell to 33% in 2018 (Figure 1).

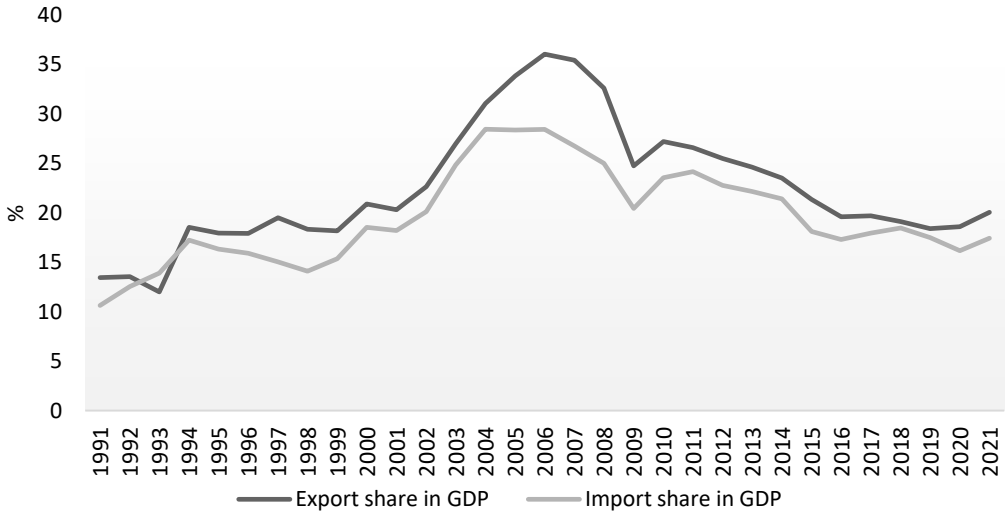


**Figure 1.** Share of foreign trade in the GDP of China.
Source: Authors according to World Bank indicators.

A relatively protected middle-income domestic market of 1.36 billion inhabitants enables China to have, though no more spectacular, but steady economic growth. When it comes to foreign investment, the Chinese economy made similar changes. The largest share of FDI net inflow in Chinese GDP was 5%–6% in the mid-1990s. In the early 2000s, it was about 3%, and, after 2013, it barely exceeded 1% of GDP (Figure 2). This was a Chinese step toward deglobalization.

In contrast, FDI outflow was 1% of GDP in 2008, and the maximum share of 1.8% was reached in 2016. From 2013 to 2016, China invested hundreds of billions of dollars in overseas infrastructure projects under the Belt and Road Initiative (BRI). China has kept investing abroad as a direction of development, as mapped out in the "going out" strategy. In the current developmental strategy, outward FDI has a more significant place. The BRI may be seen as a concrete extension of previous Chinese policies (Joshua, 2019, p. 42).

However, for two consecutive years, i.e., in 2017 and 2018, China faced a decline in investment. In particular, the volume of Chinese investment in the USA diminished from US$46 billion in 2016 to US$29 billion in 2017, and then to US$4.8 billion in 2018, or 90% in two years (Hanemann and Lysenko, 2019). Some of the investments in the USA were sold because of the uncertainty and disruption in economic relations between the two countries. Chinese investment in other countries was also reduced, mainly due to significantly reduced reserves, numerous inefficient investments and failure to collect claims from debtor countries. The share of FDI outflow dropped to pre-BRI levels, at about 1% of GDP.

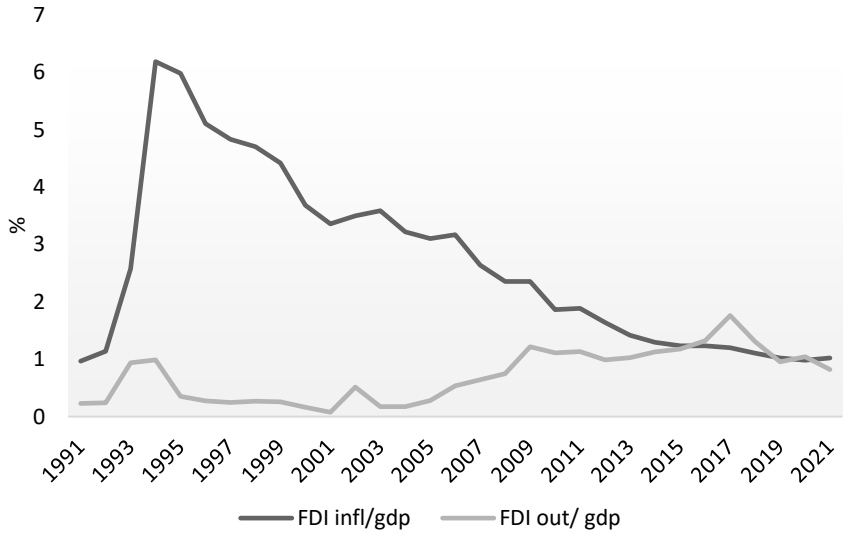


**Figure 2.** Share of FDI inflow and FDI outflow in the GDP of China.
Source: Authors according to World Bank indicators.

From the point of view of the third aspect of globalization, i.e., integration in GVCs, China has also been strengthening its independence since 2000. Participation in GVCs in the early stages allowed China to setup production facilities with foreign capital, thus laying the foundation for its industry. On the other hand, it generated greater profits for those "lead firms" in the value chain that control branding and product conception (e.g., Apple). At the same time, contract manufacturers (e.g., call centers) tend to earn slim profits and may never develop the autonomy or capability needed to develop

and market their own branded products. Typically, "firms that provide routine assembly tasks and other simple services within GVCs earn less, pay their workers less and are more vulnerable to business cycles" (Gereffi, 2018, p. 367).

China is abandoning this position quickly and successfully. In Chinese exports, the share of imported components is continuously decreasing, and the share of domestic components is increasing. According to UNCTAD data on FVA, as well as the World Bank's total exports, we have determined the degree of integration of the Chinese economy into global product chains. The share of FVA in exports has abruptly declined since 2000. With a 26% share in exports, as much as FVA was in 2001, it rapidly declined to 17% in just three years (2004), and, after 2012, a new sharp and continuous decline would follow from 17% to only 9% in 2021 (Figure 3). This change was brought about by the economic rise of China itself, which, over the two decades, had significantly altered the condition, structure and potential of the Chinese economy.

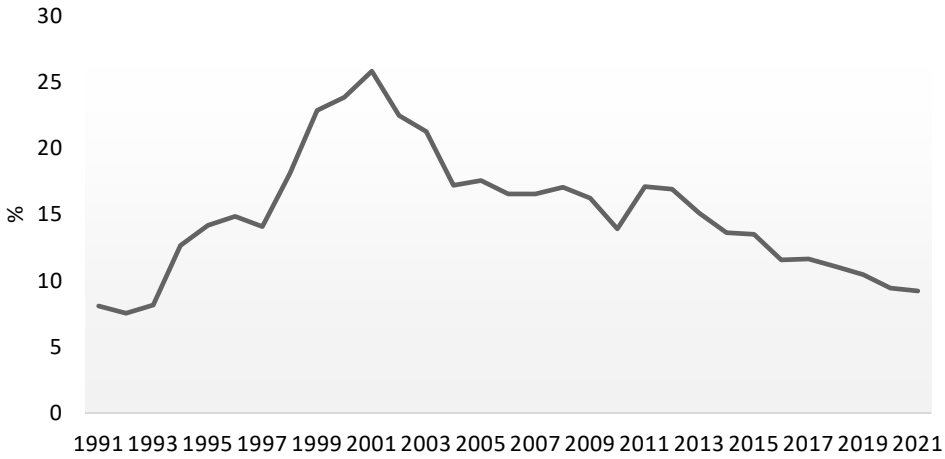


**Figure 3.** Foreign value added in China's export.
Source: Authors according to UNCTAD-Eora database.

The decrease in FVA, and thus the share of global product chains, is the result of technological development. Initially, Chinese manufacturing and exports were dominated by products with low domestic value added, usually performing the final assembly of products using imported components. The development of Chinese production was based on the shift toward exporting goods with a greater share of domestic value added. Over time, China expanded from assembly activities to the "production of lower-technology peripheral products, such as computer keyboards, and then to an increasing number of parts and components" (Jenkins, 2019, p. 47). The study of Kee and Tang (2016) found that the substitution of domestic for imported materials was caused by a greater variety of domestic materials becoming available at lower prices. Reducing the share of FVA in Chinese exports (upstream links) means a climb in global manufacturing networks. Instead of positioning itself as one of many manufacturers in one of numerous manufacturing phases of vertical manufacturing, China is heading toward the center of the manufacturing network by taking over larger and larger parts of the production chains.

For China, gaining partial independence from other participants in the production process means a shortening of production chains, that is, another step toward deglobalization. On the other side of

vertical production, i.e., downstream links, the volume of Chinese exports incorporated into other products abroad and then re-exported is continually increasing (Jenkins, 2019, p. 47). This also reduces the number of participants, especially the number of other developing countries, in the product chains in which China is included.

Finally, by taking over the entire manufacturing process, especially when it is supported by its own innovations and brands, China is on the way to transforming from the world's workshop into a world manufacturing power. The once-cheap labor force, as the main motivation for the presence of MNCs from all developed countries and the driver of international production, has risen to a level of median income. Production without any environmental and labor regulations is also a matter of the past. China is gradually squeezing large MNCs out of production chains; but, the rise of China within global product networks is a long-term process, which has recently begun. Several of the world's largest companies (Apple, Adidas, Samsung, Philips, etc.) are still operating in China, bringing their brand, market, techniques and technologies, and taking all of the profits. In this sense, China's economy is far from having a central position in international manufacturing and resilience to changes in international manufacturing.

Thus, the Chinese economy, as well as those of developed countries, is reducing the degree of its integration into the world economy in all aspects: foreign trade, FDI inflow and outflow and GVCs. This is generally not a failure of the Chinese economy, as it is the result of a revised developmental strategy and conscious efforts of the Chinese government to transfer the key economic backbone to the domestic market so that economic success does not depend on external shocks.

The response to the disruptions formulated at the end of 2020, called the *Dual Circulation* paradigm, "refers to the partial separation of internal circulation, the domestic cycle of production, distribution, and consumption, from external circulation, based on export demand" (Stanojević, 2022). This name was not used in the previous analysis because the *Dual Circulation* concept was only included in the five-year plan of 2021–2025, but it is clear from everything shown that all activities toward separation from global flows started years earlier. The new paradigm is not exactly new, but it has only more clearly formulated and elaborated strategies to protect the economy from global shocks.

The question is whether this Chinese strategy has been successful or whether deglobalization trends have weakened China's economy. The aim of the empirical research that follows was to determine the extent and direction of this influence.

## 5. Impact of deglobalization on the Chinese economy

As stated in the previous chapter, what indicates a tendency toward deglobalization of the world economy is a continuous and significant decrease in the share of three main indicators in the world economy, i.e., a decrease in their importance. In this section, the impact of previous analyses of deglobalization trends, i.e., international trade, investment and international production, on China's economy will be empirically analyzed.

### *5.1. Variables and methodology*

The study uses time-series data covering the period from 1991 to 2021. The dependent variable is the GDP of China (in constant 2017 international $) in a selected year. GDP is determined by many factors other than globalization-related variables, but, for the purposes of this research, five

independent variables related to the most important Chinese indicators of the international economy were singled out: FDI inflow and FDI outflow share in GDP, export and import share in GDP and FVA share in total export of China. The data sources are World Bank indicators for the first four independent and dependent variables, while the data source for FVA is the UNCTAD-Eora GVC database.

The objective of the study was to link the GDP of China with these globalization-related variables. The autoregressive distributed lag (ARDL) model is the most suitable model, given that it empirically exhibits meaningful long-run relationships. The variable of interest is assumed to be a function of the past values of itself (autoregressive) and the current and past values of other variables (distributed lag). The ARDL has a great advantage over the traditional Granger (1981) and Engle and Granger (1987) cointegration analysis because it allows time series to be integrated into different orders, I(0) and I(1).

The general ARDL model (Greene, 2003) is as follows:

$$Y_t = \mu + \Sigma_{i=1}^{p} \delta_1 Y_{t-i} + \Sigma_{i=0}^{q} \beta_1 X_{1t-i} + \cdots \varepsilon_{it} \quad (1)$$

where $Y_t$ is a vector; $\alpha$ is a constant; $X_t$ denotes independent variables; $\delta$ and $\beta$ are coefficients for the dependent and independent variables, respectively; $\varepsilon_{it}$ is a vector of the error terms; $p$ denotes the lags used for the dependent variable; $q$ denote the lags used for independent variables. The usual criterion of rejecting the null hypothesis at the 5% significance level was accepted.

Before applying the ARDL, it is a precondition to determine the order of integration of the variables. The critical assumption of the ARDL method is that the series must be integrated at I(0) or I(1). In this study, the stationarity of each time series was tested by using the augmented Dickey-Fuller (ADF) unit root test. Series were tested at the 0 level, with 1- and 2-year lags.

After checking the unit root test, the next stage uses the ARDL approach to confirm that the lag length is chosen appropriately. We use the most common approach of the Akaike information criterion (AIC) to illustrate the relative lag length. Considering that it is for testing the long-run relationship among the variables, the current values of the variables are excluded (Nkoro and Uko, 2016), so AIC does not include the 0 lag.

The obtained results of optimal lags are included in the ARDL model for short-run and long-run effects that are evaluated separately. The application of the model (Eq (2)) gives short-run effects, while the ARDL bounds testing approach proposed by Pesaran et al. (2001) is used to assess long-run relationships. If the results of this test provide a basis for the assumption that there is a long-run relationship between the dependent and independent variables, an error correction model (ECM) is launched to evaluate the impact of the variables (summary and individually) in the long run.

### *5.2. Empirical results and discussion*

#### 5.2.1. Unit root

The results of the ADF unit root tests presented in Table 1 reveal that the study variables are stationary in a different order. GDP, imports and exports are stationary at the 0 level; FDI inflow is stationary with lag 1; FDI outflow is stationary at levels 0, 1 and 2 and FVA is stationary with lags 1 and 2. Given that all variables are stationary, there are no obstacles to their further use in the procedures for evaluating their effects.

**Table 1.** ADF unit root test.

| Variable | Coefficient | Standard error | t-value | p-value |
|---|---|---|---|---|
| GDP | | | | |
| Lag 0 | 0.536 | 0.245 | 2.19 | 0.032 |
| Lag 1 | −0.004 | 0.005 | −1.12 | 0.273 |
| Lag 2 | −0.039 | 0.267 | 0.15 | 0.706 |
| FDI inflow | | | | |
| Lag 0 | 0.626 | 0.134 | 4.65 | 0.000 |
| Lag 1 | −0.031 | 0.055 | −0.58 | 0.567 |
| Lag 2 | −0.265 | 0.144 | −1.84 | 0.079 |
| FDI outflow | | | | |
| Lag 0 | −0.221 | 0.190 | −1.17 | 0.255 |
| Lag 1 | −0.138 | 0.136 | −1.92 | 0.171 |
| Lag 2 | −0.191 | 0.181 | −1.05 | 0.302 |
| Export | | | | |
| Lag 0 | −0.006 | 0.174 | −004 | 0.970 |
| Lag 1 | −0.238 | 0.088 | −2.70 | 0.013 |
| Lag 2 | 0.186 | 0.172 | 1.08 | 0.291 |
| Import | | | | |
| Lag 0 | 0.179 | 0.193 | 0.92 | 0.364 |
| Lag 1 | −0.175 | 0.095 | −2.02 | 0.048 |
| Lag 2 | 0.043 | 0.187 | 0.23 | 0.714 |
| FVA | | | | |
| Lag 0 | 0.220 | 0.188 | 1.17 | 0.252 |
| Lag 1 | −0.212 | 0.097 | −2.17 | 0.040 |
| Lag 2 | −0.213 | 0.192 | 1.11 | 0.276 |

### 5.2.2. Optimal lag order

The AIC lag-order selection criteria showed that the optimal lag for all independent variables is 1 year and 2 years for the dependent one (Appendix). These lags have been included in the ARDL model to estimate short- and long-run relationships. The same results were obtained by other approaches that estimate the optimal lag, i.e., SBIC and HQIC (Appendix).

### 5.2.3. Short-run relation

The equation that includes the variables and optimal lags takes the following form:

$$lnGDP_t = \mu + \Sigma_{i=1}^{p}\delta_1 lnGDP_{t-2} + \Sigma_{i=0}^{q1}\beta_1 lnFDIinf_{t-1} + \Sigma_{i=0}^{q2}\beta_2 lnFDIout_{t-1} + \Sigma_{i=0}^{q3}\beta_3 lnexp_{t-1} + \Sigma_{i=0}^{q4}\beta_4 lnIMP_{t-1} + \Sigma_{i=0}^{q5}\beta_5 lnFVA_{t-1} + \varepsilon_t \quad (2)$$

Following are the results of short-run relations.

The results for short-run relations between globalization-related variables and China's GDP indicate the high sensitivity of the Chinese economy to changes in the share of international trade, investment and production in the world economy. The results show that China's economy is strongly influenced by global trade openness, the ramifications of GVCs and FDI volumes. The model as a

whole (F and R) is highly statistically significant, with very high determination coefficients of 96%.

**Table 2.** ARDL short-run results.

| | Coefficient | Std. error | t | P>\|t\| | 95% conf. interval | |
|---|---|---|---|---|---|---|
| GDP | 1.3859 | 0.2942 | 4/71 | 0.000 | 0.7651 | 2.0067 |
| FDI inflow | 1.0363 | 0.0864 | 11.99 | 0.000 | 0.8570 | 1.2155 |
| FDI outflow | 0.1875 | 0.0746 | 2.51 | 0.020 | 0.0327 | 0.3422 |
| Export | −1.2573 | 0.4583 | −2.74 | 0.012 | −2.2076 | −0.3068 |
| Import | 1.0126 | 0.4388 | 2.31 | 0.032 | 0.0973 | 1.9279 |
| FVA | −1.0001 | 0.2280 | −4.39 | 0.000 | −1.4758 | −0.5245 |
| Cons. | 0.8114 | 0.7421 | 1.09 | 0.287 | −0.7365 | 2.3594 |

Note: F (10,18) = 12071.10; Prob > F= 0.0000; $R^2$ = 0.9653; Adj. $R^2$ = 0.9496; Log likelihood = 95.4135; Root MS = 0.1147.

Each variable is also statistically significant (t-value greater than 2 and p-value below 0.5), except for the constant. The expected largest and most statistically significant impact on GDP is FDI inflow, which automatically enters GDP (which does not mean that it benefits the Chinese economy in the long term), and the GDP from the previous year. The growth of FDI inflow by 1% in a given year contributes to the growth of China's GDP by 1.03% in the following year. FDI outflow and imports have significant positive coefficients, with a slightly lower p-value. An increase in the placement of investments abroad by 1% contributes to the growth of China's GDP by 1.87% in the next year, which is the highest coefficient in the model, while an increase in imports by 1% leads to a rise in GDP by 1.01%. The positive relationship between the placement of investments abroad (FDI outflow variable) is in accordance with the described change in China's position as a global investor within the "going out" strategy and the benefits of the BRI.

The change in the developmental principles of the Chinese economy due to deglobalization, which is the subject of this study, is clearly shown in the variables of exports and FVA. They have high significance but a negative sign in this model. Although exports are constantly increasing in absolute terms, their growth has long lagged behind the growth of the economy (as shown in Figure 1). Some of the reasons may be the saturation of foreign markets with Chinese goods and the reduced competitiveness of Chinese goods compared to underdeveloped countries (thanks to convergence). These phenomena are undoubtedly present. However, if we bear in mind that the sign is negative at the same time for FVA, and only for these two variables (which are naturally linked), this indicates that the share of exports in the economy is decreasing because the participation of China's GVCs is shrinking. More precisely, as shown in Section 4, China does not abandon activities within GVCs, but it takes them over, which we consider a successful, targeted and planned implementation of the new developmental concept, later called *Dual Circulation*.

Including the obtained coefficients, the model takes the following form:

$$lnGDP_t = \mu + \Sigma_{i=1}^{p} 1.3859 lnGDP_{t-2} + \Sigma_{i=0}^{q1} 1.0363 lnFDIinf_{t-1} + \Sigma_{i=0}^{q2} 0.1875 lnFDIout_{t-1} - \Sigma_{i=0}^{q3} 1.2573 lnexp_{t-1} + \Sigma_{i=0}^{q4} 0.0126 lnIMP_{t-1} - \Sigma_{i=0}^{q5} 1.0001 lnFVA_{t-1} + \varepsilon_t \quad (3)$$

The coefficient meets the statistical criteria (p- and t-values), and the sign is expectedly positive, bearing in mind the huge revenues from projects abroad, but the results are of lower intensity and

somewhat less statistical significance than the other variables. This is a consequence of the fact that the test refers to a short-term relationship, and, unlike inflows, which are directly included in the GDP, income from the placement of investments, especially in infrastructure projects, comes much later.

### 5.2.4. Long-run relations

To assess the long-term effects of variables, the ARDL bounds test was launched.
The hypotheses tested in the model are as follows:
H0: No long-run relationship between variables.
H1: H0 is not true.
The results are given in Table 3.

**Table 3.** ARDL bounds cointegration testing long-run effects.

| F = 4.752, t = −1.916<br>Critical Values (0.1–0.01), F-statistics, Case 3 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | [I_0]<br>L_1 | [I_1]<br>L_1 | [I_0]<br>L_05 | [I_1]<br>L_05 | [I_0]<br>L_025 | [I_1]<br>L_025 | [I_0]<br>L_01 | [I_1]<br>L_01 |
| k_5 | 2,26 | 3.35 | 2.62 | 3.79 | 2.96 | 4.18 | 3.41 | 4.68 |
| accept if F < critical value for I (0) regressors<br>reject if F > critical value for I (1) regressors | | | | | | | | |
| Critical Values (0.1–0.01), t-statistics, Case 3 | | | | | | | | |
| | [I_0]<br>L_1 | [I_1]<br>L_1 | [I_0]<br>L_05 | [I_1]<br>L_05 | [I_0]<br>L_025 | [I_1]<br>L_025 | [I_0]<br>L_01 | [I_1]<br>L_01 |
| k_5 | −2.57 | −3.86 | −2.86 | −4.19 | −3.13 | −4.46 | −3.43 | −4.79 |
| accept if t > critical value for I (0) regressors<br>reject if t < critical value for I (1) regressors | | | | | | | | |

Note: * [I_0] stands for lower bound; [I_1] is upper bound; k denotes non-deterministic regressors in the long-run relationship.

The results show that the F (4.752) is greater than the critical value for the upper bound I (1) (3.79), which means that the null hypothesis can be rejected.

Contrary to the F statistic, the t statistic shows that the null hypothesis cannot be rejected because t (−1.916) is also greater than the critical value for the I (1) regressors (−4.19).

Considering the mixed results, it can be concluded that the test results for the long-run relationship between independent and dependent variables are statistically inconclusive. Running the ECM thus becomes redundant. The ECM, in terms of short-term effects, shows the same data we obtained by using the ARDL model (Table 2), while, in the section for long-term relationships, the t-value (time and p-value) would certainly show insufficient statistical significance of most variables.

Nevertheless, some conclusions about long-term effects can be made. Given that F has a high value, it is an indicator that the model, as a sum of selected variables, which could collectively be characterized as globalization-related economic variables, has a significant long-term impact on China's GDP. The weak t statistic shows that the influence of individual international economic parameters is unstable and unpredictable, which is actually not unexpected because these are indicators that depend to a large extent on external conditions, which, in recent times, have been showing more frequent and more intense disturbances.

## 6. Conclusions

The trends that marked the globalization of economies at the end of the 20th and the beginning of the 21st century took the opposite direction after the World Financial Crisis. The world economy, which has operated for several decades on the basis of internationally accepted rules, is returning to the framework of bilateral interactions of economic entities, i.e., companies and countries. Trade, investment and production are affected by intensive processes of withdrawal from the international to the national level. The recent restrictions on international interactions due to the pandemic of COVID-19 have greatly accelerated these processes. Coronavirus has particularly disrupted GVCs. After the pandemic, many international trade flows will not be resumed, as each country will find domestic resources or geographically close partners for the most important imported products.

Some causes of deglobalization processes, such as global market saturation and the international convergence of labor prices, have foundation in economic laws. In addition, in each of the analyzed segments, there is one thing in common, and that is the political will of the key players, as expressed by the growing protectionism in the field of international trade and foreign investment. Both groups of causes of deglobalization are relatively long-term by nature, and they do not have cyclic character; therefore, they will not be significantly changed in accordance with the changes in indicators such as economic growth, supply, demand, productivity, etc. Economic deglobalization is a relatively lasting, fundamental process that transforms the entire international economic system.

The current downtrend in the economic deglobalization negatively affects the Chinese economy, but the new Chinese developmental strategy, which is oriented toward domestic production to meet domestic demand and financed by internal resources, has produced excellent results. Significant changes in Chinese developmental strategies aimed at protecting domestic economy from external shocks (later called *Dual Circulation*) have led to a decrease in the share of all international indicators in the Chinese economy. This is shown by both the statistical description of changes in globalization-related variables, and confirmed by the results of the conducted empirical research.

A quantitative analysis, based on an ARDL model and ADF and AIC tests, showed that international economic integration has a strong impact on China's economy. The results for short-run relations between globalization-related variables and China's GDP indicates the high sensitivity of the Chinese economy to changes in the share of international trade, investment and production in the world economy.

In addition to the usual positive and statistically significant signs of FDI inflow and GDP from the previous year, in the short term, imports and FDI outflow also have positive and significant coefficients. The positive relationship between the placement of investments abroad (FDI outflow variable) is in accordance with the described change in China's position as a global investor within the "going out" strategy and the benefits of the BRI. On the other hand, exports and FVA have a high significance but a negative sign in this model. Given that both variables simultaneously (and only these) have a negative sign, this indicates that the share of exports in the economy is decreasing because the participation of China's GVCs is shrinking. More precisely, China did not reduce activities within GVCs, but reliance on exports diminished by China's successful takeover of growing parts of global product chains. It can be considered to be a successful targeted and planned implementation of a new developmental concept.

Long-run effects were assessed by running an ARDL bounds test. The results showed a strong influence of the model as a whole, but a weak statistical significance of the variables individually. The

mixed results of the assessment of long-term effects indicate that globalization-related economic variables together have a significant long-term impact on China's GDP, while individual international economic parameters are unstable and unpredictable. This is actually not unexpected because, separately, these indicators are strongly dependent on external conditions, which, in recent times, has been showing more frequent and more intense disturbances.

Under the conditions of the new circumstances, the strategy of protecting the Chinese economy from global disruptions does not mean that China is giving up its activities in the international economy. The new paradigm allows the Chinese economy to take a better international position as a global investor instead of a recipient of investments, and to integrate parts of global product chains instead of being one of their production links. Such positions in the global economy also enable the reverse China's influence on world economic integration (globalization). The BRI is, today, the most dynamic and unique segment of the globalization process. It may not have the potential to maintain the previous intensity of economic globalization, but it gives it a new shape and character.

## Conflict of interest

All authors declare no conflict of interest regarding the publication of this paper.

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