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The changing role of China in global value chains: Effects of the COVID-19 pandemic and geopolitical tensions

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The implementation of China's "reform and opening-up" policy paved the way for leveraging the country's comparative advantage in labor costs and its abundant pool of low-skilled workers to attract foreign investments and transform the country from isolation to become an integral part of the global economy. China gradually deepened its embeddedness in global value chains (GVCs) and ultimately emerged as the leading trading partner to most of the developed countries, however a shift in global sentiment and a fundamentally wavered belief in trade liberalization – initially triggered by the aftermath of the 2008 financial crisis, subsequently amplified by geopolitical tensions, protectionist policies, national security concerns and the COVID-19 pandemic – set back the pace of globalization and specifically raised concerns about the inherent risks associated with the significant reliance on China – as well as on the geographically spread production networks in general – when it comes to global production. The aim of the paper is to examine how the aforementioned events of the past decade and the lately arising call for increased resilience affected China's role and weight in global production, as well as to identify trends in the dynamics of the country's GVC participation through the combination of qualitative and quantitative methods.

Keywords: GVC, China, pandemic, decoupling, resilience

1. Introduction

While many of the classical frameworks on international trade were set on the premise that cross-border trade takes place in the form of exporting and importing final products, the post-World War II trade liberalization efforts – including the gradual reduction of tariff and non-tariff barriers through a series of multilateral and reciprocal agreements (Ruta, 2017) – paired up with the rapid development of information and communication technologies (ICT) and revolutionary advancements in transportation modes fundamentally changed the nature of global trade in the second half of the 20th century (Antrás–Chor, 2021). A shift in the regulatory environment towards liberalization and advanced technologies enabled companies to disintegrate their production stages for efficiency gains and transfer (offshore) the fragmented production blocks to various geographical locations with comparative advantages primarily in labor costs (Inomata, 2017). The gradual proliferation of cross-border production networks – driven by a desire for efficiency gains – were subsequently labelled as the "new paradigm" for the global economy based on global value chains (GVCs) (Baldwin, 2006).

The fact that countries no longer had to be capable of performing the full sequence of production tasks and process raw materials to finished products on their

own opened opportunities for developing countries – China[1] serving as the most notable example – to step on the path of growth and development through specialization (Hollweg, 2019). Consequently, the global economy became deeply interconnected and incrementally reliant on China starting from the 1990s as many of the firms domiciled in developed countries began to transfer their low value-added manufacturing tasks to China – with a comparative advantage in labor costs and an abundant pool of potential workers (Urata, 2001). The latter, and the size of the national economy per se, is an important determinant when it comes to assessing a developing country's potential impact on global trade, as many other post-Soviet countries had also liberalized their economies in the 1990s, however, their impact was limited compared to China's. Over time, China has emerged as the top trading partner for a significant portion of developed and developing countries, as well as the prime destination of FDI flows, while its embeddedness and weight in GVCs have deepened.

The 2008 financial crisis wavered the decades-long sentiment of continuous trade liberalization and was proven to be a turning point for the global economy by dismantling the predominant belief in the net positive effects ("win-win") of international cooperation (World Bank, 2020). As a result of a series of events (e.g. emerged national security concerns derailing Sino-US relations, or the COVID-19 pandemic) in the past decade, the overall political momentum has shifted by different considerations coming into play with regards to the decision-making process concerning international trade and outsourcing – supplementing, if not replacing the pure efficiency-seeking and resource-optimizing considerations. The recent emergence of the desire for increased self-reliance and resilience, as well as rising national security concerns, changed the dynamics of the global economy and the perception of China as a trading partner or an FDI destination.

The purpose of this paper is to analyze the (i) root causes and (ii) impacts of the partial retreat of globalization from the perspective of China, particularly through the lense of its changing role in international trade and global value chains. To form a coherent logical structure, I start by introducing the theoretical foundations from a historical perspective by briefly elaborating on the development of GVCs, then – through the qualitative analysis of the literature – I proceed to review China's role and participation patterns in the global economy starting from the implementation of the economic reforms in the 1980s up until the financial crisis. Subsequently, I contextualize the research topic by analyzing some of the major trends of the past decade that influenced the dynamics of international trade, followed by a section that focuses on how these trends – with special attention to geopolitical tensions and the COVID-19 pandemic – impacted China's role and weight in GVCs. To test the theoretical framework against empirical data and quantify the trends assessed in the paper, I am going to focus on FDI inflow as a quantitative proxy to measure how political tensions between the West and China may have influenced the decoupling sentiment in the past 15 years from an investment perspective through a comparative analysis of FDI data. Finally, I summarize the key findings of the paper and offer pathways for academic discussion and future research.

[1] Hereinafter understood as the People's Republic of China.

2. What are global value chains?

2.1. Drivers and evolution

The theoretical foundations for global value chains were initially laid through the concept of global commodity chains (Hopkins–Wallerstein, 1986; Gereffi–Korzeniewicz, 1993), emphasizing the importance of networks and coordinated production processes involving the input of multiple economic actors in order to produce a final product. Subsequently, Jones and Kierzkowski (1990) described the notion of firms "slicing up" the production process to production blocks and connecting the chain of blocks by service links. Baldwin (2006) provided a comprehensive analysis to explain how value chains emerged and international trade gained momentum by identifying the drivers of the broader "unbundling" process in a historical context. He identified the first unbundling period ("old paradigm") as occurring in the late 19th century when the proliferation of steam ships and railways caused transportation cost to rapidly decline, enabling the production to be separated geographically from the point of consumption, creating a "North" versus "South" split. Likewise, the driver of the second unbundling ("new paradigm") also happened to be a series of revolutionary advancements, this time – about a century after the first unbundling, the "transition period" interrupted by two world wars and the economic and monetary instability in-between the two unbundling periods – in the ICT sector, which ultimately made service-offshoring possible and intensified the competition between workers globally. While the first unbundling enabled the geographic separation of production and consumption, the second unbundling set the ground for the separation and transfer of production processes. Grossman and Rossi-Hansberg (2008) labelled the "new paradigm" as "task trade" to describe the notion of international division of labor and task-specialization for the sake of productivity gains and efficiency maximization, while Feenstra (1998) captured this notion by drawing a parallel between the disintegration of production and the integration of global trade.

Foreign direct investments (FDI) and international trade are the key drivers and the two most indicative metrics of global value chain activities (OECD, 2017), as the former measures the flow and stock of cross-border investments by economic actors (primarily by multinational enterprises), and the latter represents the commercial ties and transactions between companies located in different countries. As a result of the second unbundling, starting from the early 1980s, the growth of FDI flows began to outperform the annual expansion of global trade – and therefore became an important component of GDP growth (Kalotay–Sass, 2021) – as firms operating in industrialized countries like the United States or Japan began to offshore labor-intensive production and assembly tasks – then labor-intensive service industry functions (Mankiw–Swagel, 2006) – to developing countries, at the time mostly in the East Asian region (Urata, 2001).

Consequently, international trade in intermediate goods (parts and components) was rapidly expanding (Johnson–Noguera, 2021; Degain et al., 2017), outgrowing the expansion of trade in final goods during the 1990s (Yeats, 1998).

By 2013, more than 50% of manufacturing imports and 70% of service imports were intermediate goods and services, respectively (OECD, 2013).

2.2. Definition and macroeconomic measurement

A global value chain encompasses the full range of activities – consisting of a series of stages in a predetermined sequence – required to produce a product or a service from conception to final use, with each stage adding value and with at least two stages being performed in different countries (Antràs, 2019; OECD, 2013). Depending on the number of times an intermediate product crosses borders throughout the value chain, we can differentiate between simple (one border-crossing) and complex (at least two border-crossings) GVCs (Wang et al., 2017).

In conjunction with the elevated level of international trade in intermediate goods, the shortcomings of conventional, gross export-import data analysis were realized by academia when it comes to measuring international trade flows, analyzing the external orientation of national economies, and adequately assessing the role and embeddedness of particular countries in global value chains (Campa–Goldberg, 1997). On a macroeconomic level, the two key metrics of measuring GVC participation are backward and forward participation rates. The former represent the "buyer's perspective" and therefore indicate the imported foreign value-added content embodied in a country's gross exports, whereas the latter is often called the "seller's perspective", measuring the share of domestic value-added content of exports not destined for final consumption, but the respective inputs to be further used in production by another country and re-exported subsequently (Antràs–Chor, 2021; Ndubuisi–Owusu, 2021). As many of the GVC activities take shape in the form of trade in intermediate goods and services, the core notion of GVC analysis from a trade perspective is to separate the imported input from the domestic added-value content, which brings us closer to adequately assessing a country's embeddedness in GVCs (WTO, 2023).

Alongside the value-added trade analysis, the examination of FDI flows is also a fundamental component of understanding the trends of the global economy. The relevancy of FDI-analysis from a GVC perspective lies in the fact that cross-border vertical specialization activities – i.e. firms increasing production efficiency and optimizing costs through establishing foreign subsidiaries in other countries, while keeping the control and ownership in-house, as opposed to outsourcing value chain activities to foreign contractors who are independent by ownership from the original firm (Kogut, 1985; Yi, 2003) – can be most appropriately measured through foreign direct investments (Blonigen, 2005). For the sake of completeness, it needs to be noted that there is no perfect way of precisely breaking down the composition of FDI to have a clear metric for GVC-related investments aiming to build productive capacities (Kalotay–Sass, 2021).

3. China becoming an integral part of the global economy

While the decades immediately following World War II were hallmarked by the creation of the US-led institutional framework for free trade, the active participants of the internationally liberalized trading ecosystem were essentially restricted to the Unites States, Western Europe, and Japan (a group of countries that will be hereinafter referred to as "the West"). Later on, starting from the late 1980s, formerly isolated countries – including China, India, then the former member states of the CMEA and the Soviet Union – also began to open up their markets and lift trade barriers, which ultimately resulted in the average annual growth of international trade outperforming the growth of global output. The period from the early 1980s until the financial crisis of 2008 is commonly considered to be the heyday of deepening global economic integration – greatly facilitated by the rapid technological development, most importantly in the information and communication technology (ICT) sector – through trade liberalization (Irwin, 2020).

The People's Republic of China was established in 1949, but the country remained isolated until the early 1980s, when the practical implications of Deng Xiaoping's "reform and opening-up" started to manifest and "socialism with Chinese characteristics" began to take shape. As the central government began to decentralize the means of productions and lift restrictions on foreign direct investments, and formulated special economic zones in the coastal regions (Kissinger, 2011), a period hallmarked by massive inflow of FDI followed – which peaked in the 1990s (Antrás, 2020). Subsequently, China strengthened its position as an emerging participant of the global economy by joining international organizations and multilateral trade agreements, including the IMF, World Bank, and later the WTO (Vogel, 2018). These decades were not only characterized by rapid economic growth but were also accompanied by increased social prosperity (Mitter–Johnson, 2021). The integration of China into the global trading ecosystem not only led to an unprecedented alleviation of poverty within the country but also reshaped the global economy and served as the one of the key catalysts for the economic boom of the past decades (Rajah–Leng, 2022). Nevertheless, China's ascent to become a dominant global economic power was not – and is still not – a seamless process, primarily due to the active governmental interventions in the Chinese market that contradicts the core WTO principles. Over the course of the years preceding the country's WTO admittance – as well as in the decades that followed, up until today – the Chinese economic regime fueled heated debates among the participants of the liberalized global trading ecosystem (Mavroidis–Sapir, 2021).

As China had a significant comparative advantage in labor cost and a greatly abundant pool of low-skilled workers – ready to be re-channeled from agriculture to industrial production (Eichengreen et al., 2012) –, the country became highly attractive for Western companies that were seeking opportunities to optimize their production costs and, therefore, increase their efficiency and profitability (Urata, 2001). As a result, China developed into the first and foremost destination of offshored, low value-added, labor-intensive production activities – tapping into GVCs by initially participating in low value-added tasks affiliated with the middle of the

smile curve[2] (Inomata, 2013). In line with the theory of the investment development path (Dunning, 1981; Dunning, 1986; Dunning–Narula, 1996), the continuous inflow of FDI induced booming economic growth in China and set the country on a developing trajectory with steadily increasing forward and backward GVC participation rates (OECD, 2021). The country's integration into the global economy was primarily based upon its incrementally deepening role in processing trade – that is, the process of importing intermediate goods (e.g. materials, parts, and components), assembling the imported inputs, and then re-exporting the finished products to foreign markets (Dai et al., 2016). Processing trade primarily took place in the country's export processing zones located along its Eastern coastline. As a result, while initially accounting for only 2.7% of the global industrial production in 1990, China gradually evolved into the largest actor in the global manufacturing industry. By 2010, almost 20% of the worldwide industrial production was taking place in China (Müller–Voigt, 2018). Within the same time span of two decades, China also overtook the US as the largest value-added manufacturer by 2010 (Black–Morrison, 2021).

From an international trade perspective, as a result of China's increased embeddedness in global and regional value chains, intra-regional trade in the early 21st century expanded rapidly in Asia, while it slightly decreased in North America and Europe. By the same token, both North America and Europe recorded gains in inter-regional trade, primarily explained by these regions' deep economic ties with China (Dollar, 2019). Although the tide has been apparently turning lately as China's participation rate in Asian value chains is declining simultaneously with its changing role in GVCs (Herrero–Nguyen, 2019), inferring an economic strategy focusing not on regional, but primarily on domestic production linkages within China.

4. Major trends of the global economy in the past decade

4.1. From globalization to slowbalization

"Slowbalization" became a term commonly used in the IB academic discourse to describe the retreat of globalization in the decade following the financial crisis and recession of 2008-10 (Economist, 2019), which was subsequently exaggerated by a partial decoupling between the United States and the People's Republic of China, the COVID-19 pandemic, and the direct and indirect impacts of the war waged by Russia against Ukraine.

As Antrás (2020) argues, the deglobalization trend observed in the past decade is an inherent consequence – exacerbated by the aforementioned phenomena – of the unsustainably high pace of globalization (labelled as "hyper-globalization")

[2] The "smile curve" is a term coined in the 1990s to describe the visual representation of the different value-added contents of upstream, production and downstream stages in a typical GVC. The X axis shows the stages of the production process in sequential order, while the Y axis represents the value-added content of the respective stage. Upstream and downstream activities typically contain higher added-value compared to the "middle" section of the production process, which generally consists of the labor-intensive assembly and production stages – and hence the smile-shaped curve (Inomata, 2023).

that took off after 1980s – in the sense that recent deglobalization or slowbalization trends are just correcting mechanisms for excessive- or hyper-globalization. The era of hyper-globalization was hallmarked by growing international interdependence, therefore by the same token, deglobalization can be described as "the process of weakening interdependence among nations" (Witt, 2019b:2). Empirical data also reaffirms the theoretical framework that under de-globalizing circumstances, countries tend to rely on foreign inputs – and FDI – to a lesser extent, and the focus starts to shift towards domestic production as opposed to a relatively elevated level of international trade in goods and services. According to Irwin (2020), global economic integration hit a historical turning point in 2008 – in line with the findings of Witt (2019b) – as the ratio of the sum of world exports and imports divided by world GDP – a proxy labelled the "trade openness index" – had started to decrease for a prolonged period of time for the first time since the end of World War II. As the post-recession years shed light on the pitfalls and shortcomings – partially derived from the underregulated nature – of the global economy, the realizations induced increased protectionism and inward turning momentum in countries that were previously the engines of globalization. This phenomenon can be partially attributed to the inherent structural economic setbacks following the crisis, however, the turning sentiment was further exacerbated by a shift in policymaking, supported by publications focusing on the disadvantages of international integration from the perspective of developed countries, especially from the point of view of low-skilled workers (Autor et al., 2013).

When it comes to GVCs, this trend manifested in a sharp but rather temporary reshoring activity that took place right after the crisis, however, the trend eventually lost momentum by the early 2010s, and key indicators of GVC performance have been rather stagnating since (Alvarez et al., 2021).

4.2. Geopolitical tensions

As uncertainty increased in the past decade, so did trust in GVCs decrease, and, as a political response, populism reared its head to offer solutions to the drawbacks and adverse impacts of hyper-globalization (Rodrik, 2018). Partially driven by the anxiety caused by the loss of – mostly low value added – manufacturing jobs over the decades in developed countries, as well the increased role of embedded national security concerns in discussions revolving around global value chains, we have witnessed a proliferation of inward-looking strategies lately. Leading politicians in economic powerhouses like the United States, United Kingdom, Brazil or China have been openly advocating for protectionist measures raising the importance of self-reliance mainly regarding knowledge- and IP-intensive, or dual-use technology production processes that include the use of artificial intelligence, quantum computing, advanced robotics or semiconductors (Solingen et al., 2021).

Despite the United States serving as the flagship of globalization for decades, President Trump announced the "America First" policy in the mid-2010s and introduced a set of tariff barriers over time – mostly concerning the bilateral trade with China, but simultaneously the US withdrew from several multilateral agreements – as protectionist measures, allegedly with the aim of supporting the

domestic economy. A process that was subsequently followed, under the Biden administration, by embracing policy stances like friend-shoring – aiming to shift supply chains away from China to "trusted countries" (Yellen, 2022) – or the strategic self-reliance with regards to cutting-edge semiconductor manufacturing (Allison–Schmidt, 2022). Consequently, by now, hostile attitude towards China is founded on bipartisan support in US politics (Shirk, 2023). At the same time, China has also shown signs of turning inwards by pursuing governmental policies targeting the country's transformation from a labor intensive to a knowledge intensive economy with high domestic added value (Li, 2018), as well as with domestically designed and produced cutting-edge technology equipment (Allison–Schmidt, 2022).

4.3. COVID-19 pandemic

The global outbreak of COVID-19 – which, from an economic perspective, can be defined as an "exogeneous shock of uncommon magnitude imposed on firms with international commercial linkages" (Verbeke, 2020) – in the first half of 2020 severely disrupted value chains and had a negative impact on gross output (Kumagai et al., 2020). The protective safety measures self-imposed by the governments of most of the developed and emerging countries have put restrictions on the movement of people and goods, and hence disrupted business operations in many sectors primarily through the combination of the following four channels: (i) reduction in employment, (ii) sharp drop in travel, (iii) plummeting demand for services that require face-to-face interactions among participants, and (iv) increased costs of international transactions (Maliszewska et al., 2020).

The increased uncertainty resulted in both supply (e.g. of semiconductors, personal protective equipment, or simply through the overall delays in cross-border trade) and demand (e.g. increased for medical supplies, streaming services, digital gadgets; decreased for non-essential consumer goods or services that require proximity of people) side shocks (Baldwin–Tomiura, 2020), as well as plummeting FDI flows (Strange, 2020). The impact and severity of the economic shocks caused by the pandemic was uneven among different countries and regions (Kalotay and Sass 2021) and was prolonged and exacerbated due to the fact that countries were hit at different times, exposing the vulnerability of GVCs that are ultimately based on the premise of uninterrupted global interconnectedness. Diversified supplier networks may have contributed to increased resilience in GVCs, however the pandemic shock showcased that, as a rule of thumb, the higher the complexity of a value chain is, the more exposed it is to disruptions (Solingen et al., 2021). By the same token, it is important to note that the interconnectedness of production blocks amplified the waves of supply shocks (Sforza–Steininger, 2020). Furthermore, as the epicenter of the pandemic happened to be in China, value chains heavily reliant on inputs from Chinese companies were more severely affected. Considering how deeply integrated China is in value chains, the impact of Chinese lockdowns and facility shutdowns rapidly became widespread in the world economy (McKibbin–Fernando, 2021).

4.4. A rising call for increased resilience

Any disruptive event, even if the direct impact is restricted to a single firm, is going to have indirect effects on a broader set of economic actors through the propagation mechanisms of the trading relationships and the – intra- and intersectoral (Tokui et al., 2017) – input-output dependencies (Acemoglu et al., 2016). International production networks are highly exposed to risks – furthermore, empirical evidence shows that longer GVCs tend to be more vulnerable to external shocks, partly because of the lack of risk-mitigation mechanisms (Solingen et al., 2021) – and are also capable of propagating disruptions in the economy. Smaller shocks tend to have negligible effect on GVC operations, however, large shocks typically trigger strong responses and adjustments (Hunneus, 2018).

The core notion of resilience – from an economic, ecological and engineering perspective – is the ability to absorb and overcome external shocks in the shortest possible time (Giuseppina–Michele, 2018). As Solingen et al. (2021:21) defines, GVC resilience is "the ability of these chains to anticipate and prepare for severe disruptions in a way that maximizes capacity to absorb shocks, adapt to new realities, and reestablish optimized operations in the shortest possible time".

5. China's changing role and weight in global value chains and international trade

The two distinguishable and broader driving forces behind China's changing role in GVCs are the overall slowing pace of globalization – as assessed earlier – and the country's economic decoupling from the United States. Decoupling is defined as the "process of weakening interdependence between two nations or blocks of nations" (Witt et al., 2023:1) and can be measured through the trends of GDP-weighted FDI flows and trade data. Furthermore, in its core, it can be largely attributed to the fact that after decades of being economically dependent on the US and the West, China by now has emerged as the legitimate challenger of US hegemony (Allison, 2017, Witt, 2019a).

As revolutionary advancements in the technology sector were among the most significant drivers of the disintegration of production processes historically, the tide has been apparently turning. On the one hand, some of the cutting-edge technologies – for example, 3D printing, advanced robotics or AI-based solutions – carry the potential of (at least partially) eliminating the need for human labor, foreseeably in relatively low value-added manufacturing activities, which has practical implications for US and European companies offshoring their activities to China (Witt et al., 2023). The combination of new opportunities for cost-efficient localized production and the high pace of real wage increase in China – which far outgrew the real wage increase in other Southeast Asian countries – is likely to reduce the Western companies' dependence on offshored Chinese production activities (Huang et al., 2021). On the other hand, with the (a) continuous sophistication and proliferation of dual-use technologies (i.e. commercial and military) – as well as the intensifying battle for the dominant role in cutting-edge technologies, like semiconductor production (Patel, 2022) –, and (b) China's increasing dominance in sensitive technological areas like battery production,

national security concerns emerged as a primer consideration in a number of knowledge-intensive GVCs with regards to what activities to offshore and to where (Hille, 2020; Hu et al., 2021), considering the concerns revolving around the proper protection of intellectual property rights (Antrás, 2020). According to the framework composed by Witt et al. (2023), companies – and governments – may pursue different value-chain strategies depending on two factors: (a) strategic importance in conjunction with national security considerations, and (b) reshorability of the process, which can be understood as the realistic feasibility of moving offshored production processes back to the home country. Consequently, China's significance in GVCs is likely to lessen over time as the US led bloc of nations are still the leading innovators with much of the GVCs dominated by Western lead firms (Witt, 2019a) – although there is a growing number of Chinese lead firms in some areas. For Western lead firms, the incentives to transfer low value-added processes to China are fading due to the country's diminishing comparative advantage (although it is important to note that Chinese labor productivity increased significantly in the past decades), while lead firms may be reluctant to establish Chinese subsidiaries for high value-added activities (Antrás, 2020) – ultimately curbing China's trajectory to move up the value chains through international cooperation. On the other hand, many multinational enterprises (MNEs) with production facilities in China are producing in the country primarily to satisfy the local demand, therefore, they hardly have any incentive to reshore these activities as long as the continuous economic growth and increasing prosperity keep Chinese consumption at steady levels (McKinsey, 2020). Furthermore, the increased number of Chinese-owned production capacities that are crucial for GVC operations also influence the country's long-term embeddedness in value chains. Overall, any reshoring trend from China that may follow is likely to take years due to the hysteresis of value chains related to sunk costs (Di Stefano et al., 2022).

Supplementing the aforementioned considerations, a set of political and economic factors further amplifies the deterioration of the relationship between China and the West, and therefore infers changes in China's role in GVCs. Although the turning point in political sentiment is commonly realized as a post financial crisis phenomenon, trade and FDI data prove that the economic interdependence between the US and China has started to fall years before 2008, and the trend has been ongoing since (Witt et al., 2023). Among the core reasons – apart from the rising wage levels – we can mention (a) the slowing economic growth in China that implies lower returns on investments (Eichengreen et al., 2012), and (b) substantial and often unpredictable government interventions that increase the overall level of uncertainty. In conjunction with the latter, the willingness of Chinese policymakers to make politically motivated economic interventions was undeniably showcased during the COVID-19 pandemic, with draconian lockdowns, arrests, additional taxes, and factory shutdowns frequently enacted without prior notice (Mitchell et al., 2022). It consequently led to the realization of the vulnerability of GVCs that rely on single-sourcing methods with Chinese partners. In other words, the occasional unreliability of Chinese upstream suppliers and the uncertain regulatory environment triggered many Western firms and governments to shift their focus from taking into account solely cost-oriented considerations to putting more

emphasis on value chain resilience (Rapoza, 2020). One potential way of spreading risk – although at the expense of a certain degree of redundancy and hence reduced efficiency (George–Schillebeeckx, 2022) – in GVCs is geographical diversification by building parallel supplier networks and endorsing the "China+1" sourcing strategy (Black–Morrison, 2021). From the perspective of China, it implies the reduction of the country's embeddedness in value chains – explained by the desire of partner countries to reduce their dependencies on China and hence increase the overall value chain resilience (Baldwin–Freeman, 2022) –, which is contrary to the intentions and efforts of the Chinese government to (i) increase the global economy's dependence on China through the deep integration of Chinese firms in GVCs (Rudd, 2021), and (ii) position the country as a de facto monopoly concerning a set of crucial raw materials-based inputs. This aspect is especially relevant from the perspective of the European Union, as EU member states, by and large, became asymmetrically integrated in value chains dominated by Chinese firms in a sense that while China managed to increase its DVX (domestic value of third country's exports, or export of intermediates for re-export) vis-à-vis the EU, the European value-added content of Chinese re-exports (FVA, from China's perspective) has fallen. In other words, this trend indicates that the EU became more reliant on Chinese input than vice versa (Herrero–Nguyen, 2019). On the other hand, continuous and potentially accelerating economic detachment from the West is likely to have a detrimental effect on China's ability to escape the middle-income trap (Witt, 2016).

Chinese governmental policies, 5-year plans and strategic documents outline the vision of the country's leaders with regards to China's desired position in the global economy and the designated pathway for the development of the domestic economy (Witt, 2022). "Made in China 2020" was one of the first broader frameworks that explicitly made reference to the China's desire to gain strategic independence – for example, through significant governmental subsidies for domestic R&D – and to become less reliant on foreign technological inputs (Müller–Voigt, 2018). Although China is likely to fall short on the quantifiable goals of this strategic document, the country's latest 5-year plan (enacted in 2020) remains consistent with the inward-oriented sentiment focused on 'dual circulation' (Hu et al. 2021). It keeps the reduced dependence on foreign supplies among the top priorities and puts emphasis on strengthening domestic markets – both from the supply (domestic production) and demand (domestic consumption) side (Takahashi, 2020; Black–Morrison, 2021). Furthermore, the governmental plan highlights the importance of scientific and technological self-reliance (Luo–Witt, 2022) – even if it comes at the cost of short-term economic pain (Asia Society, 2023). The aforementioned policies can be interpreted as strong government interventions that are fundamentally contradictory to the principles of liberalized markets.

One practical way of pursuing such strategies is to enact policies and provide governmental funding for the purpose of deepening and upgrading domestic value chain linkages, which can ultimately lead to the increase in the value-added content of exports (Banga, 2014). Alternatively, countries may decide to reshore activities to increase the domestic value-added content in a given GVC, while – by the same token – decreasing their exposure to external shocks and increasing their

self-reliance (Titievskaia et al., 2020; Alvarez et al., 2021). To a certain extent, both China and the US are currently moving on this trajectory.

With deteriorating economic ties with the West, China has been pursuing geopolitical initiatives globally in the past decade – most notably the Belt and Road Initiative – with the aim of building political and economic partnerships – which can be understood as a sphere of interest – primarily in the developing world (Nordin–Weissmann, 2018). In the context of China's participation in GVCs, one potential implication of such efforts is that it may set the foundation for Chinese companies to start offshoring labor-intensive, low value-added activities to, for example, African countries with lower wage levels compared to China, which could ultimately facilitate a higher value-added content generated in China through increased efficiency (Lewin–Witt, 2022). Shifting the production to higher value-added tasks is called upgrading in the literature (cf. Humphrey, 2004). On the other hand, such a trend could also potentially help African countries to "move up the value chain" (Gibbon, 2008) by acquiring capabilities and accumulating knowledge through leveraging the spillover effects derived from the extensive networks built through GVC activities.

6. Comparative FDI analysis to identify quantifiable trends in investment flows

6.1. Approach and methodology

The key findings of the OECD's recent analysis about the value-added trade of China (OECD, 2022) reaffirm the slowing momentum of the country's GVC trade – foreign value-added content of exports, domestic value-added content driven by foreign final demand, share of imported intermediate inputs subsequently embodied in exports all fell between 2008 and 2018. As mentioned before, the other proxy commonly understood as an adequate indicator of measuring GVC activities is FDI.

The following quantitative analysis conducted by the author is based on the view held by Witt et al. (2023), who argue that FDI flows are the most proper way of measuring contemporary trends, as both trade data and the amount of FDI stock in a given country can largely be attributed to strategic decisions made years, or even decades ago – which could partially explain how trade in goods between the US and China reached a record high volume at $691 billion in 2022 (Martin–Monteiro, 2023) –, whereas the inflow of FDI can be used to quantify the contemporary appetite of foreign firms to invest and establish affiliates in a given country. When attempting to assess the relative position of China, a relevant proxy can be to measure its ability to attract foreign investments compared to emerging countries that may serve as alternatives when it comes to offshored value chains activities. The potential beneficiaries of China's detachment from GVCs might be Taiwan and Southeast Asian emerging countries, as well as Mexico due to its proximity to the United States and low wage-level (Hille, 2020; Rapoza, 2020). The FDI data of UNCTAD (2023) was used during the analysis, the observed period is 15 years (2007–2021).

Even though FDI is considered to be an adequate proxy to assess investment flows in the context of GVC activities, in line with reasons mentioned earlier in this

paper, one must note the limitations as well. For example, Beugelsdijk et al. (2010) raise awareness of the hidden biases FDI stock analysis may imply when it comes to assessing the affiliate activities of MNEs, and Antalóczy and Sass (2014) describe how indirect FDI flows – motivated by practical financial incentives – may distort the results of FDI analysis and the conclusions drawn. Moreover, Sutherland and Anderson (2015) elaborate on how the aforementioned limitations and biases may influence our understanding of the actual activities of Chinese MNEs.

6.2. Data analysis

If we contemplate the average annual FDI inflow growth rate (using current price values) in five-year periods, the analysis undeniably proves that China, by and large, has been lagging behind in attracting new investments compared to other observed countries. With its single digit annual growth over the past 15 years – which was just narrowly in positive territory between 2012 and 2016 – almost all examined countries outperformed China in inflow FDI. The pivotal notion of relocating production blocks from the "strategic competitor" China to a "friendly" Taiwan is not reaffirmed by this analysis, but the main beneficiaries appear to be Southeast Asian countries. Consequently, the trend of more FDI flowing to countries that can serve as alternative destinations of relocated value chain activities – at the expense of continuous investment flows to China – is verified by Figure 1.

Table 1. Average annual FDI inflow growth rate, 2007–2021

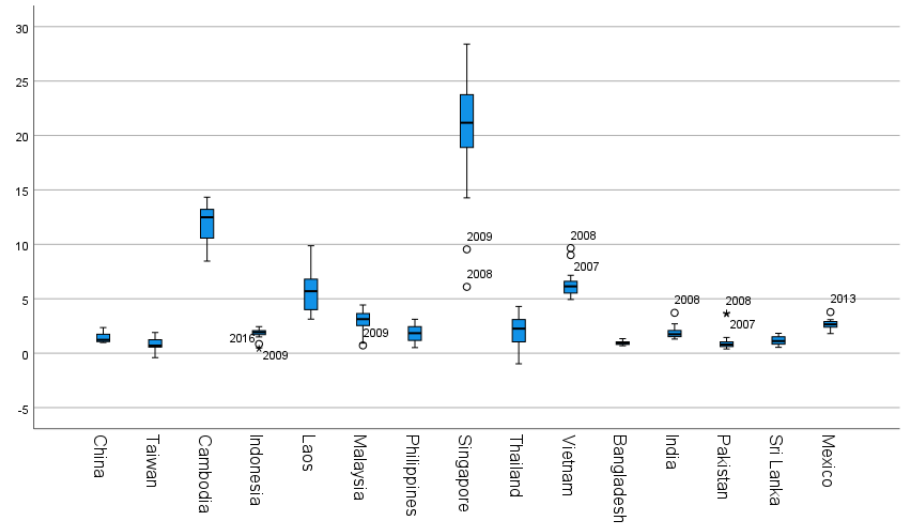
Region	Country	2007-2011	2012-2016	2017-2021	2007-2021
Eastern Asia	China	12.3%	1.6%	6.5%	6.8%
	Taiwan	-52.7%	3.4%	4.6%	-14.9%
South-eastern Asia	Cambodia	29.0%	11.4%	7.4%	15.9%
	Indonesia	50.0%	-17.3%	85.3%	39.3%
	Laos	16.2%	30.8%	11.1%	19.4%
	Malaysia	100.7%	0.4%	34.9%	45.3%
	Philippines	4.3%	35.0%	8.2%	15.8%
	Singapore	35.6%	13.8%	11.6%	20.3%
	Thailand	3.3%	78.9%	-80.7%	0.5%
	Vietnam	41.3%	11.2%	4.6%	19.0%
Southern Asia	Bangladesh	13.3%	16.6%	8.4%	12.7%
	India	19.0%	6.9%	2.4%	9.4%
	Pakistan	-17.0%	22.7%	-2.1%	1.2%
	Sri Lanka	24.5%	0.3%	2.5%	9.1%
Central America	Mexico	10.1%	14.8%	0.9%	8.6%

Source: *Source*: own construction based on UNCTAD (2023)

Furthermore, considering the FDI inflow shown relative to the GDP helps to adequately assess how new investments kept pace with the growth of overall economic output. For most of the observed countries, the value was considerably lower in 2021 compared to 2007 – which can be at least partially attributed to "slowbalization" trends –, although China stands out as one of the worst performers

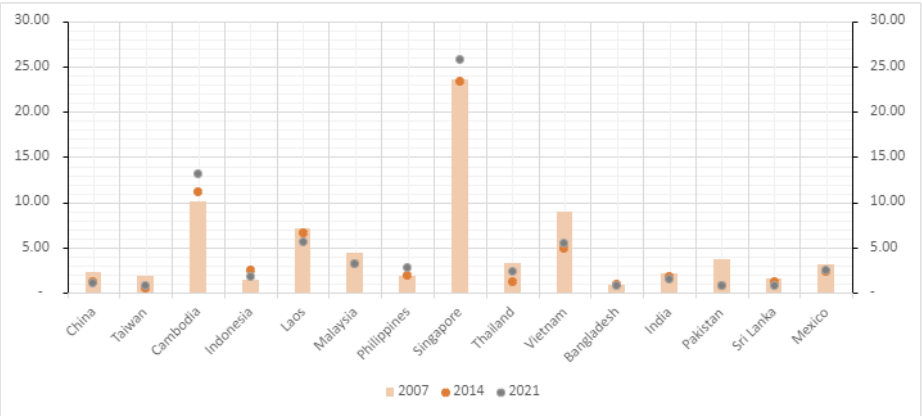
in this domain by a sharp fall from 2.35% to 1.05%. Only the Philippines, Cambodia, Indonesia, and Singapore managed to attract more FDI relative to their GDP by the end of the examined period. For completeness, it is important to note that due to the size of the economy per se, the nominal inflow of FDI to China in 2021 still exceeds the Singaporean, Indian and Mexican FDI inflows *combined*.

Figure 1. Box plot analysis of FDI inflow (% of GDP), 2007–2021



Source: own construction based on UNCTAD (2023)

Figure 2. Time series analysis of FDI inflow (% of GDP), 2007–2014–2021



Source: own construction based on UNCTAD (2023)

The aforementioned trends may be interpreted as signs and early indicators of the relative decline of China as for its role as the first and foremost destination of foreign direct investments among emerging markets, however, the country's still dominant role becomes visible if we contemplate its share in global FDI inflows. Even though the decoupling sentiment shows clear signs, more than 1 out of every 10

dollars of FDI invested globally ended up finding its way to China in 2021. Due to the robustness of the domestic market, its mass production potential and still deep embeddedness in GVCs, China remains economically attractive amidst all challenges. In the interest of truth, one must note that the size of the country per se is a crucial determinant in China's share of global FDI inflows. Both in terms of population and land area, China is among the largest countries, therefore at least part of its significance in the global share of FDI inflows can be attributed to this variable.

Table 2. FDI inflow as % of global FDI inflow, 2007-2021

Region	Country	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Δ (pp.) 2007-2021
Eastern Asia	China	4.38	7.29	7.60	8.25	7.70	8.24	8.49	9.16	6.57	6.54	8.35	9.55	9.54	15.51	11.44	7.05
	Taiwan	0.41	0.37	0.23	0.18	- 0.12	0.22	0.25	0.20	0.12	0.47	0.21	0.49	0.56	0.63	0.34	- 0.07
South-eastern Asia	Cambodia	0.05	0.06	0.08	0.10	0.10	0.14	0.14	0.13	0.09	0.12	0.17	0.22	0.25	0.38	0.22	0.17
	Indonesia	0.36	0.63	0.39	0.99	1.19	1.30	1.29	1.56	0.81	0.19	1.26	1.42	1.61	1.93	1.27	0.91
	Laos	0.02	0.02	0.02	0.02	0.02	0.04	0.05	0.06	0.05	0.05	0.10	0.09	0.05	0.10	0.07	0.05
	Malaysia	0.45	0.48	0.12	0.65	0.76	0.63	0.83	0.78	0.49	0.55	0.58	0.53	0.53	0.33	0.73	0.28
	Philippines	0.15	0.10	0.16	0.08	0.12	0.22	0.26	0.41	0.27	0.40	0.63	0.69	0.59	0.71	0.66	0.52
	Singapore	2.24	0.79	1.50	4.13	2.48	4.09	3.88	5.23	2.89	3.30	5.05	5.10	7.18	7.83	6.26	4.03
	Thailand	0.45	0.58	0.52	1.05	0.15	0.88	1.09	0.35	0.43	0.17	0.51	0.91	0.32	- 0.50	0.72	0.27
	Vietnam	0.37	0.64	0.61	0.58	0.47	0.57	0.61	0.66	0.57	0.62	0.86	1.07	1.09	1.64	0.99	0.62
Southern Asia	Bangladesh	0.03	0.07	0.06	0.07	0.07	0.09	0.11	0.11	0.11	0.11	0.13	0.25	0.19	0.27	0.18	0.15
	India	1.33	3.17	2.88	1.97	2.25	1.65	1.93	2.47	2.14	2.17	2.44	2.91	3.41	6.65	2.83	1.50
	Pakistan	0.29	0.37	0.19	0.15	0.07	0.06	0.09	0.13	0.08	0.13	0.15	0.12	0.15	0.21	0.13	- 0.16
	Sri Lanka	0.03	0.05	0.03	0.03	0.06	0.06	0.06	0.06	0.03	0.04	0.08	0.11	0.05	0.05	0.04	0.01
Central America	Mexico	1.70	1.99	1.44	1.96	1.59	1.48	3.31	2.18	1.72	1.52	2.09	2.35	2.32	2.90	2.00	0.29

Source: own construction based on UNCTAD (2023)

7. Discussion and conclusions

International cooperation and reciprocal trade agreements were the founding blocks of the era following World War II. Formal multilateral arrangements, the liberalization of capital flows and technological advancements paved the way for countries to move away from self-reliance and establish a world order based on international partnerships and division of labor (Antrás, 2020). Over the course of the past several decades, the increased level of living standards, the considerable alleviation of poverty and productivity gains in China can largely be attributed to the integration into the global economy through liberalization (Dollar, 2017). Initially taking part in low value-added, specialized tasks of production chains set the foundation for the knowledge- and technology transfer required to stimulate the domestic economy and paved the way for upgrading – both on an industrial and human capital level (World Bank, 2020).

However, the era of cost-focused international cooperation seems to have come to an end globally. Although IB scholars (e.g. Koren–Tenreyro, 2013; Todo et al., 2015; Solingen et al., 2021) tend to agree that the benefits of trade openness, international diversification and GVC participation outweigh the potential drawbacks caused by the increased exposure to foreign suppliers, the first decades of the 21st century showcased that emerging geopolitical tensions among economic powerhouses, rising national security concerns, and the potential of worldwide

pandemics may bring novel factors into play and override the pure efficiency-seeking considerations when it comes to offshoring decisions.

With Sino-US tensions steadily rising on multiple fronts, further decoupling (which is an ongoing phenomenon as the FDI analysis reaffirmed) is likely to follow in the years to come – inferring deep economic implications and the potential of partially restructured value chains. Inward-oriented governmental policies and strategies such as the current Chinese 5-year plan with special attention to the propagation of dual circulation or US federal subsidies for companies to backshore activities may further accelerate and exacerbate the trends observed in this paper. This phenomenon will almost certainly serve as fertile ground for future research as relocating production parts is anticipated to be a decades-long process – just as it was the case with China decades ago (Hille, 2020).

After all, empirical evidence of the last 70 years tends to confirm the notion that nation states, by and large, are better off when they step on the pathway of exploiting the underlying potential in international trade and economic openness. Even upon considering the political and economic turmoil of the past decade, the temporary retreat of globalization – which is not historically unprecedented and can be (at least partially) attributed to inevitable great power conflicts occurring from time to time (Antrás, 2020) –, and the deteriorating political and economic ties between the US and China, I agree with Witt (2002) that the logic of comparative advantages will always incentivize economic actors to engage in international trade in the long run.

As for the years and decades to follow, China's role in GVCs will most likely be influenced by the practical implications of notions like the trade-off between efficiency and resilience, strategic self-reliance, national security and technological hegemony. How these factors will shape the economic ties and the dynamics of interdependency between China and the West is going to be one of the core matters of the 21st century global economy.

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