

---

# Reshoring, nearshoring and development. Readiness and implications for Latin America and the Caribbean\*

Carlo Pietrobelli<sup>a</sup> and Cecilia Seri<sup>b</sup>

## Abstract

This paper discusses the concepts of reshoring and nearshoring, which are gaining increasing popularity. We contribute to the literature in three main ways. First, building on previous theories we define a conceptual framework and consider how recent developments – the COVID-19 pandemic and Industry 4.0 technologies – may affect these patterns. Second, we process some preliminary evidence to test whether Latin American and Caribbean economies are indeed participating in this reshoring trend. Third, we propose a measure of “reshoring readiness”, to assess whether these countries appear to be ready to host relocations and benefit from them. Overall, we find limited evidence of nearshoring to the region so far, except in Mexico, and we highlight strengths and weaknesses of the region for attracting and benefitting from future relocations.

**Keywords:** FDI, global value chains, Industry 4.0, Latin America, nearshoring, reshoring

**JEL classification codes:** F14, F21, F23, F63, L24

---

\* Received: 11 January 2023 – Revised: 17 July 2023 – Accepted: 18 July 2023

We wish to thank Rodolfo Stucchi; participants at the Globelics 2022 conference in San José, Costa Rica, and the SASE (Society for the Advancement of Socio-Economics) 2023 conference in Rio de Janeiro, Brazil; two anonymous referees; and the editors of this journal for their useful comments. We acknowledge the financial support provided by IDB Invest (Inter-American Development Bank Group) in an initial phase of this research. The opinions expressed here are only ours and do not involve IDB Invest or our respective institutions.

<sup>a</sup> Corresponding author. UNESCO Chair at United Nations University UNU-MERIT, Maastricht, Kingdom of the Netherlands; Departments of Economics, Roma Tre University, Rome, Italy (carlo.pietrobelli@uniroma3.it).

<sup>b</sup> United Nations University UNU-MERIT, Maastricht, Kingdom of the Netherlands; School of Business and Economics, Maastricht University, Maastricht, Kingdom of the Netherlands.

## 1. Introduction

The last decades of the twentieth century were characterized by a fast globalization process. Trade and industrial production were drastically restructured, reflecting the strategic decisions of many companies to offshore stages of production to exploit cheaper resources, access markets and technologies, and take advantage of geographically dispersed production networks. Global value chains (GVCs) were the name of the game (Baldwin, 2016; Ponte et al., 2019; Timmer et al., 2014), increasingly encompassing more sectors, including services, and incorporating emerging markets (UNCTAD, 2020).

However, after three decades of accelerating globalization, since 2010 international production has slowed down, with sluggish growth of trade and FDI. This may be explained by the changes in the international context, with rising labour costs in once cheap locations, rising uncertainty and protectionism (UNCTAD, 2020). Within this framework, the once common offshoring practices were challenged, and some companies started to reconsider their international location decisions to eventually “reshore” (or “backshore”) – bring production back into the country, or in its proximity – or at least some slices of the value chain.

From the standpoint of developing countries, for which foreign investment remains a crucial source of capital, nearshoring practices could represent an opportunity. However, the conditions to attract nearshoring and benefit from it are complex and hard to achieve for many countries. Moreover, despite some recent contributions discussing the effects of current GVC reconfigurations on developing countries (Bertoni and Perez Almansi, 2022; Brenton et al., 2022; Maloney et al., 2023), thus far the literature on nearshoring has mainly taken the perspective of firms in advanced economies and the likely impact on the latter. Given the firm-level nature of the phenomenon, often secretly implemented, the available evidence is still largely impressionistic.

To address these gaps, in this paper we contribute to the literature in three main ways. First, we structure the terms of the debate on reshoring and nearshoring by proposing a conceptual framework of analysis considering existing theories. Second, we suggest an original measurement of the phenomenon at the macro and trade levels, and we remedy the scant evidence on reshoring. Third, we investigate nearshoring from the perspective of developing countries and measure the nearshoring readiness of Latin American and Caribbean countries, i.e. whether those countries appear to be ready to host relocations and benefit from them.

The conceptual framework, based on the literature, is presented in section 2. We then consider how recent developments such as the emergence of new technologies and the COVID-19 pandemic may affect nearshoring (section 3). In section 4 we use macro and trade data to measure reshoring activities to Latin American and

Caribbean countries. In sections 5 and 6, we discuss and measure the reshoring readiness of these countries and conclude with some policy implications.

Overall, we observe limited evidence for nearshoring from United States multinational enterprises (MNEs) to these countries. Mexico is an exception and seems to be playing an increasingly relevant role; however, our analysis shows that it is far from displacing China. The region proves to have strengths and weaknesses in attracting potential nearshoring: the relatively high human capital may attract higher value-added stages of value chains, but the region still has a long way to go to improve its logistics and strengthen its digital infrastructure to respond to the growing concerns of buyers and investors.

## **2. The economics of reshoring: key concepts, rationales and impacts**

The concepts of reshoring and backshoring first, and that of nearshoring later, became a topic of discussion among policymakers and the press before grabbing the attention of academic research. Despite this growing attention, there is not yet a unified framework of analysis, and multiple perspectives overlap, with ensuing variations in terminology. In line with most of the literature, we use the term reshoring to refer to a generic relocation of production activities in the opposite direction from offshoring. Backshoring and nearshoring then describe different types of reshoring, respectively all the way back to the home country or to its proximity. For example, if a United States firm were moving part of its offshored production from China back to the United States, this firm would be backshoring, while if the same production were relocated to Mexico, it would be nearshoring.

In the academic literature, these phenomena have mainly been studied by international business scholars stressing the standpoint of the firm.<sup>1</sup> In this sense, reshoring practices have been considered as part of a firm's dynamic location strategy within which, given an earlier decision to offshore, this is revised and reversed, sometimes "correcting previous strategies" (Fratocchi et al., 2014; Kinkel, 2014).

However, corporations' location and relocation decisions do not only impact firms' efficiency and profitability, but also have remarkable effects on the wider economy, entailing a transformation in the international division of labour and a reconfiguration of global production. Although this aspect remains less explored, some efforts have been made in this direction (Casson, 2013; OECD, 2016; UNCTAD, 2020; UNIDO, 2019).

---

<sup>1</sup> Although most of this literature has focused on large manufacturing firms, sometimes SMEs are also analysed (Gray et al., 2013; Stentoft et al., 2016).

## 2.1 Firms' internationalization decisions

Corporate internationalization strategies involve both the choice of *where* to carry out production (i.e. the shoring decision) and of *how to organize production and source* production factors (i.e. the corporate boundary, or sourcing, choice).

The motivations for internationalization and the mode chosen to enter international markets have been extensively analysed in a large body of literature, ranging from international business to economics and industrial organization (Buckley and Casson, 1976; Hymer, 1976; Dunning, 1980, 1988 and 2000; Dunning and Rugman, 1985).

These motivations depend on the firm's and industry's characteristics, the (home and host) country contingencies and, crucially, developments in the global economy. Therefore, although many of the motivations for offshoring highlighted in the past remain relevant,<sup>2</sup> a number of push and pull factors related to the context can be fostering reshoring practices.

In terms of push factors from host countries, these mainly relate to labour markets (Piatanesi and Arauzo, 2019). The erosion of wage differentials between developed and developing countries has reduced the scope for arbitrage on labour costs and has operated as a push effect from offshore locations to home countries. In some cases, this is compounded by low labour productivity and reduced availability of skilled workers, further motivating reshoring (Gray et al., 2013; Kinkel and Maloca, 2009; Lampon et al., 2015; Tate et al., 2014; Vanchan et al., 2018).

On the other hand, some pull effects operate when incentives and government policies drive the relocation to more advantageous sites (Gray et al., 2013; Lee and Park, 2021; Vanchan et al., 2018).

Finally, several drawbacks related to the distance between home and host countries have also been highlighted by the literature, suggesting that reshoring would reflect a correction of misjudged preceding decisions, and the underestimated costs of distance. Therefore, the changing context, together with wrong past decisions, would force substantial strategy "corrections".

In this respect the literature has emphasized the importance of several factors:

- The actual transport and communication costs, far higher than what was expected

---

<sup>2</sup> In Dunning's eclectic theory of international production, a firm's offshoring decisions could be explained with four possible rationales, depending on why the firm was internationalizing: to seek natural resources, larger markets, increased efficiency, or strategic assets and capabilities (Dunning, 1980 and 1988).

- The adverse effects related to reduced flexibility in highly complex production networks (Fratocchi et al., 2014; Gylling et al., 2015; Kinkel and Maloca, 2009)
- The existence of supplier-consumer mismatches (Piatanesi and Arauzo, 2019), which are hard to settle when production is far from the final market
- The negative impact of far-away offshored production on innovation opportunities: user-producer interactions may be very important for learning and innovation in production (Chang and Andreoni, 2020; Fratocchi et al., 2016; Gray et al., 2013; Pietrobelli and Rabellotti, 2011)
- Discrepancies in institutional structures in relation to intellectual property rights (IPRs) (Gray et al., 2013; Tate, 2014), quality standards (Ancarani et al., 2015; Fratocchi et al., 2014; Stentoft et al., 2016), environmental and social conditions (Ashby, 2016; Gray et al., 2013; Tate, 2014) and other regulations

Against this backdrop, it is clear that firm-level decisions change over time, adjusting to incentives and context.

In table 1 we present a simple layout of the possible options obtained by combining the various strategic decisions by firms on where and how to carry out production. On the vertical axis we classify possible corporate boundary decisions, and on the horizontal axis the possible location decisions. Using this table, we can analyse the implications for trade, FDI flows and GVC configurations of offshoring, backshoring and nearshoring.

During the years of the globalization expansion, companies increasingly offshored their production activities using different organization and sourcing modes. Thus, they chose to either establish foreign affiliates, enter into strategic partnerships with other firms or outsource to foreign suppliers. The former case resulted in growing FDI flows, initially between Europe and the United States and, after 2000, in Asian markets (UNCTAD, 2018). The partnerships and the non-equity modes of internationalization have also been widely used, as they allowed MNEs to concentrate in higher value added segments of the value chain and outsource non-core activities.<sup>3</sup>

Offshoring location decisions, whatever the source mode chosen by the MNE, involve an expansion of global production networks. Conversely, nearshoring can be intended as a shift to a smaller geographical scope, with a movement from the last right-hand column to the central one; that is, relocating activities from a distant

---

<sup>3</sup> However, although outsourcing practices have first been related to low value added activities, they have also expanded to some higher value added segments in the upstream (e.g. R&D activities) and downstream (e.g. customer services) stages of the value chain (Pietrobelli et al., 2011; UNCTAD, 2020).

country to one in the same region of the company's headquarters. Therefore, in the case of nearshoring, FDI and international trade flows would still be observed, but with a reconfiguration of their geographical composition, implying a regionalization of value chains. If, instead, production segments are repatriated to the home country (backshoring), a reduction of international exchanges of inputs and products would appear, with more production carried out domestically by the company's domestic divisions or by domestic partners and suppliers in the same value chain.

Looking from a different perspective, nearshoring could be visualized as an expansion from home production to offshoring in the same region, in the proximity of the home country. This would imply an expansion abroad, even if limited to nearby countries, by establishing affiliates in neighbouring countries or regional value chains, or by sourcing from nearby but foreign suppliers, thereby expanding the global production network.

**Table 1. Shoring and sourcing: possible corporate decisions**

			Location (shoring) decision		
			Inshore	Nearshore	Offshore
			<i>Same country</i>	<i>Same region</i>	<i>Distant country</i>
Corporate boundary (sourcing) decision	Insource	<i>Make</i>	Domestic divisions and affiliates (domestic trade)	Establishing affiliates in a foreign nearby country (FDI and regional trade)	Establishing foreign affiliates (FDI and international trade)
	Partnership (e.g. value chains)	<i>Hybrid</i>	Domestic Partnership	Regional Partnership	Foreign Partnership
	Outsource	<i>Buy</i>	Source from domestic suppliers (domestic trade)	Source from foreign nearby supplier (regional trade)	Source from foreign supplier (international trade)

Source: Authors' adaptation from Foerstl et al. (2016).

Note: Partnerships can take various forms; for example, joint ventures, strategic partnerships, long-term contracts, captive suppliers. They can be equity- or transaction-based.

In addition, it is necessary to remark that in the context of fragmented international production often organized along GVCs, the location decision does not necessarily involve the whole value chain, but frequently only some specific segments. As a result, the backshoring and nearshoring decisions also have important implications for the reconfiguration of GVCs.

In sum, the table shows how shoring (location) and sourcing (boundary) choices reflect two different strategic decisions, and how it is the intersection between the two that outlines the emergence of different forms of internationalization of production. Both decision domains are very relevant as they shape GVCs and affect value added creation, capture and distribution across countries.

### **3. Possible forms of GVC reconfiguration. The role of technological changes and of the international environment**

Geopolitical conflicts and external shocks, such as the COVID-19 pandemic, are likely to have disruptive effects on the international fragmentation of production. Indeed, while trade wars and political tensions were already inducing a tendency towards regionalization and protectionism (Enderwick and Buckley, 2020), these tendencies might accelerate as a result of the uncertainty brought about by the COVID-19 crisis and the war in Ukraine combined with the vulnerability of many complex and geographically widespread production networks. Moreover, these elements interact with the proliferation of new technologies related to Industry 4.0, leading to potentially disruptive effects on GVC reconfiguration (UNCTAD, 2020).

#### **3.1 New technologies, Industry 4.0 and GVCs**

In the traditional international business view, technological advancements and innovations in information and communication technology were believed to encourage the internationalization of production by reducing the costs of transaction, coordination and communication (Alcácer et al., 2016; Chen and Kamal, 2016). The emergence of the so-called fourth industrial revolution is further strengthening these trends. The technological changes related to Industry 4.0, often called New Industrial Revolution technologies, include artificial intelligence, Big Data, clouds, the Internet of Things, automation and 3D printing. So far, these technologies have affected production networks only marginally, and mainly in advanced countries (UNCTAD, 2021).

While digitalization is already affecting many value chains, leading to larger “servicification” of manufacturing and greater importance of intangibles in GVCs, additional changes may be on the horizon (UNCTAD, 2020). Some studies argue that adoption of Industry 4.0 technologies could trigger reshoring activities (e.g. Brennan et al. (2015), on the Internet of Things and additive manufacturing, and De Backer et al. (2018), on robotics).<sup>4</sup> Clearly, the effects of the diffusion of these

---

<sup>4</sup> Similarly, Dachs et al. (2019) find a positive correlation between relocation decisions and adoption of New Industrial Revolution technologies by companies but conclude that actual backshoring is occurring in only 4 per cent of the 1,700 European manufacturing firms analysed.

technological changes will differ depending on the type of technology and industry. The first structured study of the potential impacts of different categories of New Industrial Revolution technologies on international production was offered by UNCTAD in the *World Investment Report 2020* (UNCTAD, 2020).

In relation to automation, the increasing availability and affordability of robotics and artificial intelligence solutions is likely to affect manufacturing value chains and raise the incentives to reshore. This tendency would be reinforced by the increasing wages in offshore locations, reducing the role of labour cost arbitrage in location decisions. However, investments in robots are highly capital-intensive, enjoy economies of scale and are likely to be feasible only for larger firms in advanced countries, possibly limiting the scope of reshoring to these countries. Moreover, the increased relevance of IPR protection is likely to foster a shift towards internalization and more hierarchical and tightly controlled forms of GVC governance. The replacement of low-skilled labour with robots is predicted to spread the value added distribution along the chain across many chain segments, and to lift total value added (i.e. shifting the whole “smile” curve upwards) due to productivity gains (UNCTAD, 2020). However, although automation represents a challenge for developing countries that rely on their lower cost of labour to attract foreign investment, some of them are responding to the threat by investing in automation themselves. This has occurred, for example, in Czechia, Slovakia and Slovenia, and has allowed them to retain many foreign productions.<sup>5</sup>

The diffusion of digitalization, that is its spread to affect all sectors of activity, is likely to reduce coordination and transaction costs. The Internet of Things, the cloud, digital platforms, artificial intelligence and Big Data make it both possible and easier to manage, monitor and control complex activities from distant locations as well as to reach remote markets without a physical presence. Digital technologies may favour more effective and safer remote communication, coordination and control, reducing the risks involved in offshoring. As a result, fragmentation may be further enhanced. Small and medium-sized enterprises, including those from developing countries, might benefit from enhanced access to GVCs, but that benefit will probably be more concentrated in low value added activities. In fact, the highly knowledge- and data-intensive segments of production are likely to be internalized by MNEs, which can also count on greater capabilities to deal with and benefit from the related technologies. However, GVC integration may in turn foster the development of firm-level capabilities in Industry 4.0-related technologies, which still have limited diffusion in developing-country firms (Delera et al., 2022).

---

<sup>5</sup> Dalia Marin, “How COVID-19 is transforming manufacturing”, *Project Syndicate*, 3 April 2020.



Finally, 3D printing is also beginning to change the configuration of production of some industries, but its effects are likely to remain confined to niche industries, with relatively limited implications for most developing countries. However, for the affected sectors, 3D printing could generate a configuration of international production characterized by small-scale and localized production. It could in principle produce a paradigmatic change in international production, through the simultaneous effects of rebundling and offshoring, with shorter value chains but geographically dispersed and very proximate to final consumers. In selected sectors, mass customization is likely to prevail, with larger shares of value added derived from the design phase and from customer-related activities, at the opposite extremes of the value added curve.

Overall, the magnitude of the shifts to come will depend on the specific industries considered and on the country contexts. Some technological elements will push for increased complexity and dispersion of value chains; others may make regional and local value chains more likely, opening opportunities for nearshoring. However, the increased capital and knowledge intensity implied by new technologies is likely to exacerbate the concentration of value creation along these chains, with access limited to fewer countries, often relatively more advanced.

### **3.2 COVID-19 crisis and the increasing uncertainty**

The disruptive effects of the COVID-19 pandemic on the global economy are multidimensional. The new crucial element is the growing uncertainty, leading some authors to foresee dramatic changes to the GVC model (e.g. Barbieri et al., 2020; Javorcik, 2020; Ling and Lanng, 2020), and an overall reduction of global supply chain activity.<sup>6</sup>

A new push towards reshoring activities could come both from managerial strategies at the firm level and from governmental actions (Elia et al., 2021). The pandemic has highlighted the vulnerability of supply chains to disruptions arising from large reliance of companies on offshore producers, and the resulting lack of self-sufficiency in countries (e.g. in medical supplies and components of key industrial supply chains; Barbieri et al., 2020). Therefore, we may expect that the search for GVC robustness and minimization of disruptions could lead to some backshoring, or to regional cooperation and nearshoring if the full relocation of the supply chain were too costly (Barbieri et al., 2020), helping to achieve a better balance between efficiency and resilience (Golgeci et al., 2020). Other firms, however, may not be able to take any of these steps, given the scale and nature of the upstream activities they have outsourced over the years, or the “massive modularity” that continues to prevail in some sectors (Thun et al., 2022).<sup>7</sup>

<sup>6</sup> Dalia Marin, “How COVID-19 is transforming manufacturing”, *Project Syndicate*, 3 April 2020.

<sup>7</sup> Diane Coyle, “Rethinking supply chains”, *Project Syndicate*, 10 June 2022, [www.project-syndicate.org](http://www.project-syndicate.org).

By contrast, some observers have claimed that the crisis has made clear the positive role of GVCs in handling disruptions in some key sectors. For example, analysing the medical devices GVC, Bamber et al. (2020) observe that particularly in the first stages of the virus diffusion, GVCs helped alleviate shortages in the countries more heavily affected by the pandemic. Internationally integrated buyers have been able to differentiate their sources for supply of essential goods that suddenly become strategic. For example, imports of gloves from non-traditional exporters of gloves such as Sri Lanka and Thailand spiked, as did imports of hospital gowns from the Dominican Republic, Honduras and Viet Nam. In sum, international production networks would have contributed to improving resilience and response to shocks whereas back- or nearshoring, which reduce the range of options, would increase risk (Bamber et al., 2020).

In this regard, a recent paper by Miroudot (2020) discusses the fine differences between *robustness* and *resilience* in GVCs, and what they imply for business strategies. Whereas robustness – i.e. avoiding disruptions altogether – might be preferable and necessary in the supply chains of essential products, in most other cases resilience may be preferred. That is, due to cost considerations, companies in non-essential production (e.g. non-medical suppliers) may accept undergoing occasional disruptions while improving their ability to resume normal operations as swiftly as possible.

In any case, value chain design and the selection of most reliable suppliers and sites are expected to be important in companies' future strategies to build both resilience and robustness (ECLAC, 2020). With companies looking for more secure sources of supply, countries that aspire to attract new segments of international production must provide reliability. In this regard, the precarious attitude of some Latin American and Caribbean countries may have not produced an increase in their dependability. For example, the unplanned management of the crisis by the Government of Mexico generated high uncertainty for firms in the automotive sector, undermining the trustworthiness of the country as a supplier.<sup>8</sup>

#### **4. Recent trends in the international productive integration of Latin America and the Caribbean**

Despite the growing attention to firms' reshoring decisions, solid empirical evidence is still scarce. Data on the location of companies and lead-firm suppliers are not openly disclosed, and this has made it difficult to obtain consistent evidence beyond many anecdotal stories and some isolated surveys.

---

<sup>8</sup> *The Economist*, "Covid-19's blow to world trade is a heavy one", 14 May 2020.

However, although preliminary and imperfect, traditional trade statistics and input-output tables can provide important information about countries' integration in international production. Thus, the aggregate of firm-level decisions, notwithstanding some expected heterogeneity, should be reflected and visible in macro-level outcomes.

As discussed above, firms take shoring decisions on the basis of several factors, much of which are industry- or context-specific. Moreover, disruptive events and technological changes, while affecting the whole economy, do not affect all sectors and firms in the same way. That is, at the micro level substantial heterogeneities exist, and therefore we cannot consider the macro dimension as being the mere sum of micro behaviours. However, if micro practices become widespread and substantial, they should be visible in trade patterns. On the basis of similar assumptions, a large literature has relied on trade (particularly of intermediates) and statistics based on input-output tables to discuss offshoring practices (e.g. Antràs and Staiger, 2012; Feenstra, 2017).

We are here interested in observing whether there is any evidence suggesting that reshoring practices are consistently occurring in the region, and if they emerge from trade statistics. Indeed, in line with the current literature (Maloney et al., 2023), we expect that the eventuality of nearshoring to Latin America and the Caribbean would largely consist of MNEs from the United States shifting activities to the region. This could happen either as a shift from other previous offshore locations or as an expansion of MNEs seeking to diversify their supply chain to new sites. Either way, if nearshoring to the region is occurring, the relative share of United States imports from Latin American and Caribbean countries should increase.

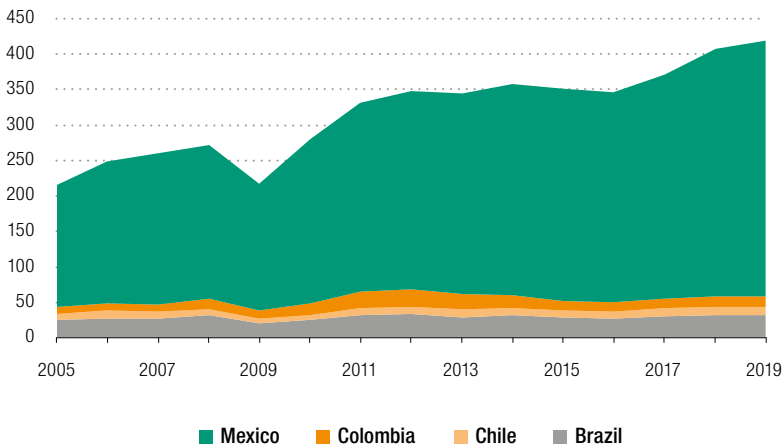
For this reason, we first look at the role of these countries in United States imports and how they perform relative to other regions, which countries are leading and if recent developments in these trends may suggest any underlying reshoring practices. Second, we follow De Becker et al. (2016) and proxy reshoring through the share of domestic demand served by imports from different countries to explore possible evidence of reshoring by United States MNEs. Finally, we look at trade in value added to gain deeper insights into the actual value embodied in trade between countries in Latin America and the Caribbean and other regions and its evolution over time.

This empirical exercise serves the purpose of offering macroeconomic evidence that may suggest the possible existence of underlying corporate relocations, without claiming that we provide direct reshoring proxies. We expect that the changing patterns at the macro level over time will reveal the ultimate effects of companies' relocation decisions and may usefully inform the discussion on nearshoring.

#### 4.1 The relevance of Latin American and Caribbean countries in United States imports and shifting patterns

As a first step in our effort to gain insights on the occurrence and extent of nearshoring, we analyse bilateral data of United States imports to explore whether the macro-level evidence supports the hypothesis of nearshoring of United States firms to Latin American and Caribbean countries. The region is the second most important in terms of imports for the United States after China, followed by the European Union<sup>9</sup> and Canada. While imports from China fell after 2018, those from Latin America and the Caribbean stagnated between 2018 and 2019. When looking at individual countries in the region, the role of Mexico is clear, with Mexican imports accounting for almost 60 per cent of total United States imports from the region in 2005 and increasing to 76 per cent in 2019 (figure 1).

**Figure 1. United States gross imports from main exporter countries in Latin America and the Caribbean, 2005–2019** (Billions of United States dollars)



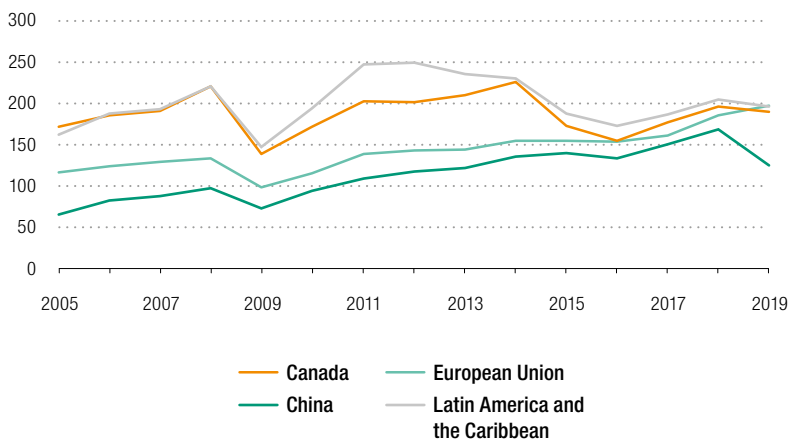
Source: Authors' elaboration based on OECD.Stat, BTDiX, ISIC Rev. 4.

However, in a world dominated by internationally fragmented production processes, considering only gross imports would be misleading. International trade often consists of intermediate products that are further processed in the importing country and then eventually re-exported in a GVC. United States imports

<sup>9</sup> The European Union refers to the aggregate of the 27 member countries as of 2023.

of intermediates from Latin America and the Caribbean countries exceeded those from European Union countries, China and Canada for most of the last 15 years (figure 2). However, they have been decreasing since 2012, differently from imports from the European Union. For China, the moderate values relative to those of gross imports might reflect the prevalence of assembled goods for final consumption.

**Figure 2. United States intermediate goods imports from selected countries and regions, 2005–2019** (Billions of United States dollars)



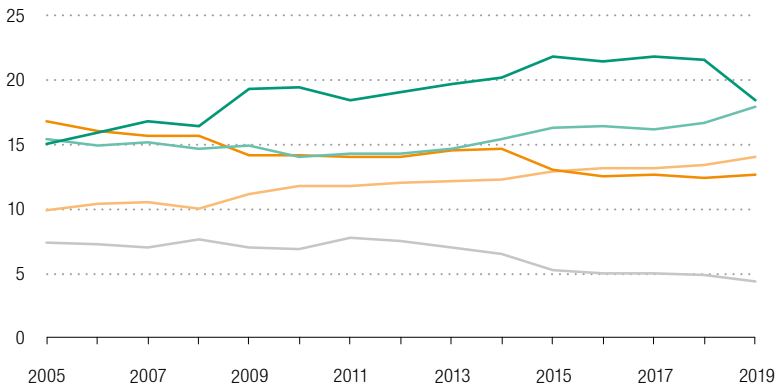
Source: Authors' elaboration based on OECD.Stat, BTDixE, ISIC Rev. 4.

Note: European Union refers to the 27 member states of the European Union as of 2023.

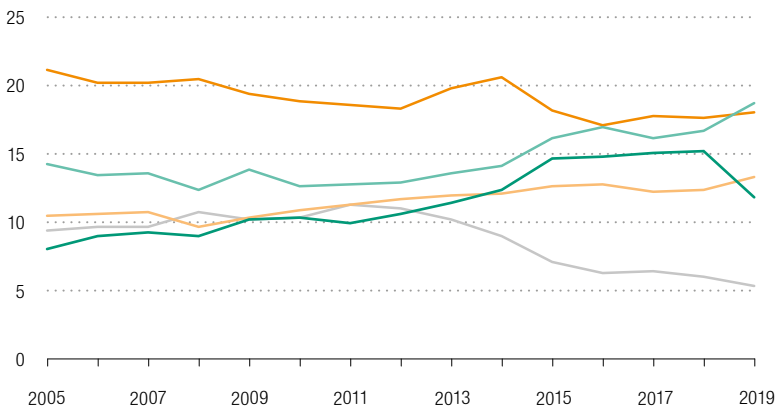
With respect to the relative participation of individual countries from the region, the figure mirrors that of gross imports (see figure 1). Mexico leads, followed by Brazil, whose relative importance is rising. Looking at United States imports from different regions as a share of total United States imports (figure 3), we can observe that the contribution of Latin American and Caribbean countries has been decreasing, especially after 2012, in terms of both gross final and intermediate imports. That is, in 2019 these countries exported more value to the United States than in 2005 (see figure 2), but they have not displaced other countries as United States trading partners during this period. This figure appears to suggest that the relocation of United States MNEs' activities to Latin America and the Caribbean, i.e. nearshoring, has been limited, except for Mexico, whose share of United States total gross imports rose from 10 to more than 14 per cent between 2005 and 2019, which could indicate some degree of backshoring. China was a growing offshore destination until 2018, with a rapid fall since then (figure 3).

**Figure 3. Shares of United States gross imports of final and intermediate goods from selected countries and regions, 2005–2019**  
(Percentage)

**a. Gross imports**



**b. Intermediate imports**



— Canada                      — Mexico  
— China                              — Rest of Latin America and the Caribbean  
— European Union

Source: Authors' elaboration based on OECD.Stat, BTDiE, ISIC Rev. 4.

Note: European Union refers to the 27 member states of the European Union as of 2023.

## 4.2 The share of United States domestic demand served by imports as a proxy for reshoring

Another way to explore possible evidence of reshoring by United States MNEs is to consider the evolution of the share of United States domestic demand served by imports.<sup>10</sup> Indeed, that share gives information on the relative relevance of other countries' production in satisfying final demand from the United States. For the hypothesis of greater backshoring to the United States to be supported, we should observe a reduction in overall imports over domestic demand, meaning that internal consumption is increasingly satisfied by domestic production (displacing foreign production carried out by either United States subsidiaries or foreign firms supplying United States MNEs). Alternatively, shifts in the shares of production carried out in different countries to serve United States demand would be a proxy for the relocation of MNE activities, and possibly for nearshoring.

Looking at the evidence, we observe that the share of United States domestic demand served by Canada (both gross and intermediate imports) declined substantially during 2005–2019, while the share served by the European Union remained stable (figure 4). Moreover, the share of United States domestic demand satisfied by foreign production does not show a substantial decline, at least in terms of gross imports, thereby not supporting the hypothesis of overall backshoring by United States MNEs. Particularly striking is the evolution of imports from China. The share of United States demand served by gross imports from China increased 40 per cent from the baseline year, and the share served by intermediate goods imports increased even more. Thus, China not only remains an important location for foreign activities of United States MNEs, but it is also possibly changing the quality of its contribution, moving from production based mainly on assembly of products to export of intermediate products to be further processed in the United States.

Conversely, the share of United States final demand served by gross final imports from Mexico rose about 30 per cent over the period but the share served by intermediate imports remained stable overall (see figure 4). This pattern, while providing some evidence to support the hypothesis of nearshoring to Mexico, also suggests that Mexico has become an increasingly important source of finished products to fulfil United States demand. This lends itself to different interpretations. On the one hand, it could hide an exacerbation of the negative aspects of the *maquila*, with rising exports from Mexico of final assembled products and possibly lower value added. On the other hand, the larger increase in gross exports relative to that of intermediate products might indicate an increase in the level of processing

---

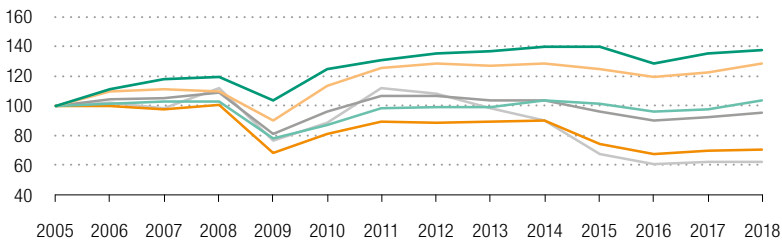
<sup>10</sup> In this exercise, we follow De Becker et al. (2016).

of Mexican products that serve the United States market and thus imply the opposite, with Mexico crafting more exported products, entering new stages of the value chain and adding more value. A definite answer would require more detailed data on trade in value added and GVC statistics.

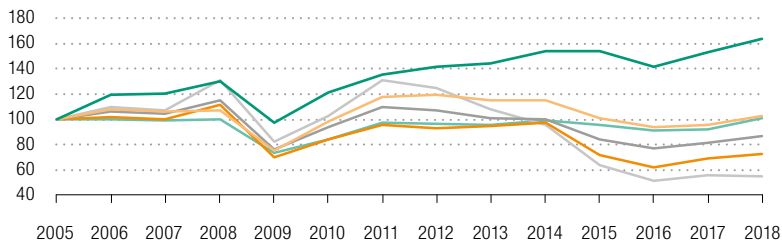
In contrast to the trend in Mexico, United States gross and intermediate imports from all other Latin American and Caribbean countries fell about 40 per cent over the period, suggesting no evidence of relocation of activities of United States MNEs to those countries during 2005–2019.

**Figure 4. Evolution in the share of United States imports as a percentage of domestic demand, 2005–2018** (Percentage, 2005 = 100)

**a. Gross imports**



**b. Intermediate imports**



Source: Authors' elaboration based on OECD.Stat, BTDixE, ISIC Rev. 4 (for import) and UNCTADstat (accessed 6 December 2020; for United States domestic demand).

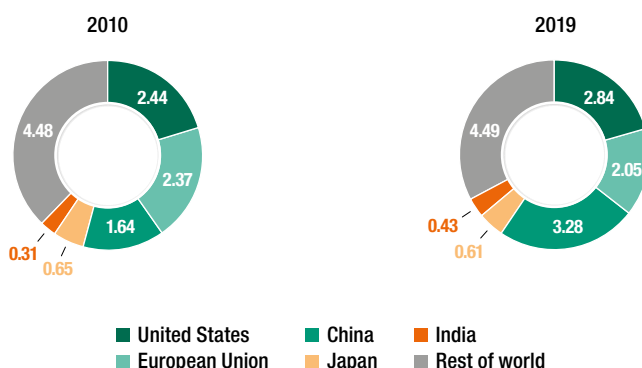
Note: European Union refers to the 27 member states of the European Union as of 2023.



### 4.3 Fragmentation of production and trade in value added

In a world of fragmented international trade and GVCs, it is necessary to look at trade in value added (Baldwin and Lopez-Gonzalez, 2015), which we do in this section. First, we observe that, excluding intraregional trade, China, the United States, and the European Union are major destination countries of value added produced in Latin American and Caribbean countries. When comparing 2010 and 2019, we observe that while China doubled its share in the absorption of value added produced in the region, the United States did not lose its prominent position, and even expanded its role. This can reinforce the expectation that, despite the growing role of China, if nearshoring to the region is to occur, it is probable that it would involve United States companies. Moreover, we notice that although most of the value added produced in Latin America and the Caribbean is consumed in the region, the internationalization of these countries has been increasing during these years, with total value added consumed abroad increasing between 12 and 14 percentage points in all countries (figure 5).

**Figure 5. Destination countries of value added produced in selected Latin America and Caribbean countries, 2010 and 2019**  
(Percentage of value added produced)

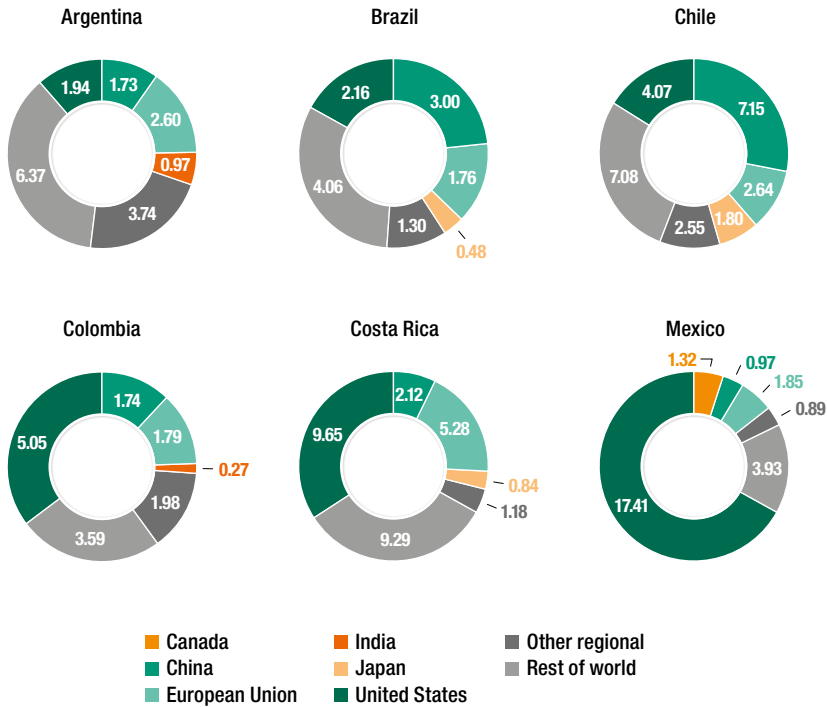


Source: Authors' elaboration based on OECD TIVA database, 2022 preliminary version.

Note: European Union refers to the 27 member states of the European Union as of 2023. Owing to data availability, the regional countries considered here are Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico and Peru.

When taking a closer look at different countries in Latin America, we find significant differences (figure 6). From Mexico and Costa Rica, the United States imports a significantly higher-than-average share of value added (over 17 and 9 per cent,

**Figure 6. Foreign destination countries of value added produced in selected Latin America and Caribbean countries in 2019**  
(Percentage of value added produced)



Source: Authors' elaboration based on OECD TIVA database, 2022 preliminary version.

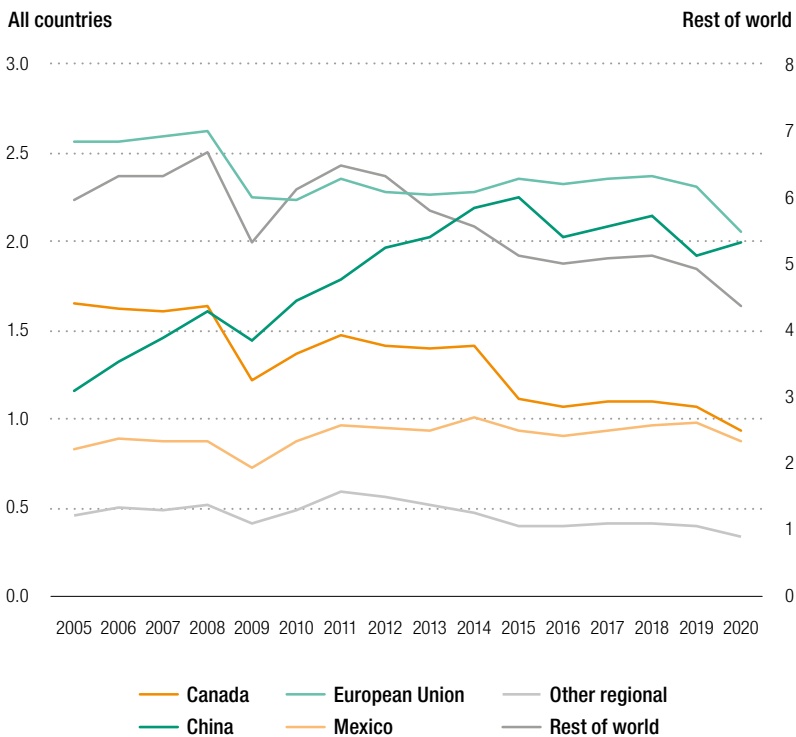
Note: European Union refers to the 27 member states of the European Union as of 2023. Owing to data availability, the regional countries considered here are Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico and Peru.

respectively), whereas for countries in South America imports from other Latin American economies are particularly relevant. This finding is in line with the observation that in Latin America as a whole value chains are more global than regional, and that regional linkages are significantly more important in South America than in Central America (Cadestin et al., 2016; World Bank, 2020).

When taking the perspective of the United States – that is, when observing the source of foreign value added used to satisfy United States demand (figure 7) – we observe similar results as in the analysis of United States imports (see figure 4). The European Union, China and Canada, in that order, are the main foreign contributors to value added absorbed by the United States during the

period observed. The increase in the consumption of Chinese-produced value added is astonishing, especially until 2015, when it plateaued and then declined, suggesting if not a tendency towards reshoring, at least a deceleration of offshoring practices. However, Latin American and Caribbean countries do not seem to have reaped the benefits of potential underlying relocations. Over the period, the main countries in the region have contributed only marginally, and the trend overall has been negative. Mexico has been a major player, but its share of value added in United States domestic demand has remained stable overall, suggesting that the increase in Mexican exports to the United States was not accompanied by an upgrade in Mexican production and providing little support to nearshoring hypotheses for the country so far.

**Figure 7. Source of foreign value added serving United States domestic demand, 2005–2020 (Percentage)**



Source: Authors' elaboration based on OECD TiVA database, 2022 preliminary version.

Note: Owing to data availability, "Other regional" here refers to the six countries included in the TiVA data set (Argentina, Brazil, Chile, Colombia, Costa Rica and Peru); Mexico is shown separately.

## **5. How can developments in reshoring and nearshoring play out in Latin American and Caribbean countries? Reshoring readiness in the region**

We have observed that reshoring and nearshoring practices are still rather limited in countries of the region. Can we expect that this trend may reverse soon? Are regional economies prepared for this event to occur?

As discussed in section 2, many factors contribute to determining MNEs' and lead firms' decisions about location and relocation. While some traditional determinants (e.g. costs) remain crucial, others are gaining importance due to technological changes and to new policies and contexts (Elia et al. 2021; Conley, 2022). Importantly, firm-level location decisions depend heavily on the macroeconomic and regulatory context and assets prevailing in each country, which determine the "reshoring readiness" of a country. In addition, these factors of attractiveness for reshoring are intertwined with the capacity of countries to maximize the possible benefits from nearshoring. In table 2 we analyse Latin American and Caribbean countries' reshoring readiness and compare it with the readiness of China and of the United States (appendix table).

### *Digitalization*

One crucial element of the new scenario is digitalization. Indeed, the digitalization of production processes offers the potential to reduce the importance of costs in location decisions and changes the determinants of location attractiveness. According to the Digital Adoption Index, a composite measure of the digital technologies spread across the key agents in an economy – people, business and governments – the overall adoption of digital technologies in Latin American and Caribbean countries is 30 per cent lower than in the United States. Substantial differences are observed within the region, with some countries showing digital adoption at a level similar to or even higher than (i.e. Chile) that of the United States and other countries, particularly across Central America and the Caribbean, lagging behind (table 2). When decomposing the index across different user groups, it becomes evident that the business sector is the largest user of digital technologies and that such technologies are less widely adopted by governments and individuals. However, almost 65 per cent of the regional population regularly used the Internet in 2019, a proxy for the level of human capital in digitalization. Again, high heterogeneity prevails in the region. Central American countries and some South American ones, such as the Plurinational State of Bolivia, Guyana and Suriname, suffer from remarkable lags in the spread of digital technologies.

Table 2. Indicators of reshoring readiness in South America, Central America and the Caribbean, China and the United States by domain

Country by region	Digitalization	Human capital/ digitalization	Logistics	Human capital	Human capital	Science, technology and innovation	Science, technology and innovation	IPR protection	Risk	Proximity to markets
	Digital Adoption Index (0–1)	Individuals using the Internet (% of population)	Logistics Performance Index (1–5)	Human Capital Index (0–1)	Upper secondary educational attainment (% of adult population)	R&D expenditure (% of GDP)	Researchers per million inhabitants (Number)	Intellectual property rights (0–10)	Resilience Index (0–100)	Remoteness Index (0–1)
South America										
Argentina	0.69	74.29	2.89	0.60	37.20	0.54 <sup>b</sup>	1 192.23 <sup>b</sup>	5.40	52.79	0.55
Bolivia (Plurinational State of)	0.48	43.83	2.36	..	18.60 <sup>d</sup>	..	..	4.20	26.27	0.56
Brazil	0.68	67.47	2.99	0.55	30.90	1.26 <sup>b</sup>	887.68 <sup>a</sup>	6.16	52.21	0.51
Chile	0.76	82.33	3.32	0.65	37.10 <sup>b</sup>	0.36 <sup>b</sup>	493.29 <sup>b</sup>	6.50	60.68	0.55
Colombia	0.64	65.01	2.94	0.60	28.50	0.24	88.02 <sup>b</sup>	6.25	49.54	0.53
Ecuador	0.57	57.27	2.88	0.59	29.60 <sup>b</sup>	0.44 <sup>a</sup>	399.49 <sup>a</sup>	5.33	35.78	0.54
Guyana	0.36	37.33	2.36	0.50	..	..	..	..	..	0.48
Paraguay	0.54	68.52	2.78	0.53	24.10	0.15 <sup>a</sup>	135.14 <sup>b</sup>	3.83	41.54	0.57
Peru	0.55	59.95	2.69	0.61	36.10	0.13	..	4.92	44.02	0.56
Suriname	0.49	48.95	..	..	13.80 <sup>a</sup>	..	..	..	..	0.48
Uruguay	0.76	76.95	2.69	0.60	17.10	0.48	696.38	4.91	63.50	0.53
Venezuela (Bolivarian Republic of)	0.49	72.00	2.23	..	26.50 <sup>c</sup>	0.34 <sup>e</sup>	300.26 <sup>c</sup>	2.48	8.86	0.53
Central America and the Caribbean										
Antigua and Barbuda	0.48	76.00	..	0.60	..	..	..	..	..	..
Bahamas (the)	0.53	85.00	2.53	..	50.00 <sup>c</sup>	..	..	..	..	..
Barbados	0.65	81.76	..	..	..	..	..	..	..	0.43
Belize	0.40	47.08	..	..	19.40 <sup>c</sup>	..	..	..	..	..
Costa Rica	0.66	81.20	2.79	0.63	17.40	0.42 <sup>b</sup>	380.41 <sup>b</sup>	6.35	52.18	0.53
Cuba	0.24	61.84	2.20	..	26.70 <sup>a</sup>	..	..	..	..	..
Dominica	0.50	69.62	..	0.54	..	..	..	..	..	..
Dominican Republic	0.50	74.82	2.66	0.50	26.10 <sup>c</sup>	..	..	4.71	41.42	0.49
El Salvador	0.50	33.82	2.58	0.55	21.70 <sup>b</sup>	0.18 <sup>b</sup>	63.71 <sup>b</sup>	4.36	28.44	0.53
Grenada	0.53	59.07	..	0.57	..	..	..	..	..	..
Guatemala	0.52	65.00	2.41	0.46	16.30 <sup>e</sup>	0.03 <sup>b</sup>	14.01 <sup>b</sup>	4.51	24.83	0.54

/...

**Table 2. Indicators of reshoring readiness in South America, Central America and the Caribbean, China and the United States by domain** (Concluded)

Country by region	Digitalization	Human capital/ digitalization	Logistics	Human capital	Human capital	Science, technology and innovation	Science, technology and innovation	IPR protection	Risk	Proximity to markets
	Digital Adoption Index (0–1)	Individuals using the Internet (% of population)	Logistics Performance Index (1–5)	Human Capital Index (0–1)	Upper secondary educational attainment (% of adult population)	R&D expenditure (% of GDP)	Researchers per million inhabitants (Number)	Intellectual property rights (0–10)	Resilience Index (0–100)	Remoteness Index (0–1)
	Haiti	0.25	32.47	2.11	0.45	..	..	..	4.05	0.00
Honduras	0.43	31.70	2.60	0.48	13.20	0.04 <sup>a</sup>	..	4.48	25.08	0.54
Jamaica	0.50	55.07	2.52	0.53	..	..	..	6.09	..	0.50
Mexico	0.60	70.07	3.05	0.61	19.20	0.31	315.26 <sup>c</sup>	5.95	48.82	0.54
Nicaragua	0.46	27.86	..	0.51	..	0.11 <sup>d</sup>	..	3.94	24.08	0.55
Panama	0.57	63.63	3.28	0.50	20.10 <sup>e</sup>	0.15 <sup>d</sup>	39.11 <sup>f</sup>	5.38	49.18	0.50
St. Kitts and Nevis	0.53	80.71	..	0.59	..	..	..	..	..	..
St. Lucia	0.40	50.82	..	0.60	24.60 <sup>f</sup>	..	..	..	..	..
St. Vincent and the Grenadines	0.50	22.39	..	0.53	32.80 <sup>b</sup>	..	..	..	..	..
Trinidad and Tobago	0.59	77.33	2.42	0.60	43.60 <sup>b</sup>	..	..	6.00	40.6	0.46
Averages, Latin America and the Caribbean, China and the United States										
Latin America and the Caribbean	0.52	64.29 <sup>a</sup>	2.66	0.56	24.86	0.67	515.40 <sup>b</sup>	5.04	38.49	0.52
China	0.59	54.30	3.61	0.65	13.50 <sup>e</sup>	2.19	1 307.12	6.02	47.93	0.48
United States	0.75	87.27	3.89	0.70	44.60	2.84	4 412.40	8.69	90.30	0.41

Source: Authors' elaboration. See appendix table for the source and description of each indicator.

Note: Except as otherwise indicated, all data refer to the most recent available year of each data set. Data for Latin America and the Caribbean are drawn from the original source or calculated as the simple average of all countries in the region for which data are available.

<sup>a</sup> Data from 2018.

<sup>b</sup> Data from 2017.

<sup>c</sup> Data from 2016.

<sup>d</sup> Data from 2015.

<sup>e</sup> Data from 2014.

<sup>f</sup> Data from 2013.

<sup>g</sup> Data from 2012.

<sup>h</sup> Data from 2011.

<sup>i</sup> Data from 2010.

### *Logistics and production costs*

Initial miscalculation of the total costs of offshoring has been highlighted in the literature as a possible driver of the early processes of offshoring. The costs of management, logistical and operational problems related to offshoring started to be assessed more carefully recently. We use the Logistic Performance Index, a composite indicator ranging between 1 and 5, to assess the comparative logistic performance of Latin American and Caribbean countries based on six dimensions: the efficiency of the customs clearance process, the quality of trade- and transport-related infrastructure, the ease of arranging competitively priced shipments, the quality of logistics services, the ability to track and trace consignments, and the frequency with which shipments reach the consignee within the scheduled time. The overall indicator places these countries in a mid-table, unfavourable position. Only Chile and Panama, and to a lesser extent Mexico and Brazil – in this order – have logistic performances competitive with those of China and the United States. As supply-chain-related operational factors gain more relevance in location decisions, improving the quality of infrastructure and logistic services as well as transport efficiency in the region will become increasingly important for maintaining competitiveness in international production networks.

### *Human capital and science, technology and innovation systems*

The co-location of research and productive activities has been considered an important factor to enable virtuous user-producer relations and beneficial feedbacks for innovation (Pisano and Shih, 2009). The literature on reshoring studies such co-location as a possible determinant of backshoring practices, as advanced countries' MNEs might want to reunite the research and development (R&D) and production stages of the value chain at home (De Backer et al., 2016). The need for advanced capabilities to employ in this knowledge-intensive stage of the value chain, together with the fear of losing the exclusiveness of specific expertise – particularly in countries with low levels of IPR protection – has motivated the belief that these circumstances would favour backshoring rather than nearshoring practices. However, as some few successful experiences demonstrate (e.g. Intel in Costa Rica), countries that can offer a substantial supply of highly skilled and cheaper human capital are in a better position to compete for the attraction of high-value, knowledge-intensive activities.

The Human Capital Index, calculated by the World Bank to measure the productivity of a future worker based on his or her health and education, is lower in Latin American and Caribbean countries than in other advanced countries, but at a level comparable with that of China. In some countries in South America, particularly Argentina, Chile and Peru, and to a lesser extent Brazil, a significant share of the adult population has completed upper secondary education. Thus, some countries in the region offer reasonable numbers of skilled and specialized workers.

Not only might countries supply trained and educated workers to be employed in foreign-owned R&D activities, but they can themselves also be home to scientific research that could attract higher-value segments of production. However, when analysing data on R&D expenditure as a percentage of gross domestic product, we find that in Latin American and Caribbean countries this share is only 30 per cent of that of China, and 23 per cent of that of the United States. In the region, Brazil is the only significant exception, with a share of 1.26 per cent in 2017.

Data on researchers per million inhabitants confirm this perception, as in Latin American and Caribbean countries the number is about one tenth that in the United States and less than half that in China. Relevant exceptions are Argentina, Brazil and Uruguay. Central American countries and even Mexico lag substantially behind. If the region wants to become competitive in higher-value segments of production and leverage the increasingly recognized importance of rebundling research with production activities, future policies should focus on strengthening science, technology and innovation systems in the region.

### *Intellectual property rights*

Another factor of concern that can limit the attraction of knowledge-intensive segments of production is the weakness of IPR. This factor is highly controversial. If on the one hand IPR security can be a stimulus to private business research, on the other it can also limit the diffusion and spillover of innovation to the wider economy. In an index ranging from 0 to 10, IPR protection is given an average score of 5 in the region. Brazil, Chile and Colombia, followed by Jamaica, Costa Rica and Trinidad and Tobago, rank the highest. Yet most countries in the region are considered to insufficiently enforce IPR protection, and this may discourage MNEs from the United States and the European Union from relocating some activities to the region. Argentina, Brazil and Ecuador are included in the third group of countries of the European Union's special attention list ("priority watch") but considered more reliable than China and India, which are in the priority 1 and priority 2 lists respectively (European Commission, 2020). Conversely, the United States considers Argentina, the Bolivarian Republic of Venezuela and Chile to be as dangerous as the two Asian countries and includes them in the priority watch list; 10 other Latin American and Caribbean countries are also on their watch list (Office of the United States Trade Representative, 2020). Ultimately, while some IPR protection should be guaranteed to earn the trust of MNEs, if a country offers other elements of attractiveness, a moderate level of IPR protection might not hinder relocations. Indeed, the low level of IPR protection in China and India, as in other Asian countries, has not prevented offshoring to these countries, where other substantial advantages prevail.



### *Risk and resilience*

Resilience became a much used and eventually abused term during the recent pandemic. What is certainly true is that reducing the risk related to disruptions and improving the capacity to speed up the resumption of operations after shocks have both gained priority in international business planning. As firms look for increasingly reliable locations for their foreign production, a resilience index that provides an indication of the ability of a country's enterprises to recover after disruptive events gives a good measure of the attractiveness of that country. The resilience index calculated by FM Global (see table 2) is based on 12 core drivers pertaining to economic, risk quality and supply chain factors. On its scale of 0–100, Latin American and Caribbean countries score 38.5 on average. This score is substantially lower than that of the United States (90.3) and also of China (47.9). However, many individual countries perform significantly better, notably Uruguay, Chile, Argentina, Brazil, Costa Rica, Colombia and Panama, in that order.

The main weakness of the region appears to be related to the risk quality score. The inherent degree of countries' exposure to natural hazards makes Latin America and the Caribbean more vulnerable than other regions. Yet, better quality and enforcement of building codes and standards may reduce vulnerability. Finally, on supply-chain-related factors, while not the main cause of weakness, countries in the region score substantially below China. As noted earlier, improving the efficiency of logistics may usefully interact with risk and resilience considerations to enhance a country's attractiveness to foreign investors.

### *Flexibility and proximity to markets*

The level of flexibility and proximity to the market offered by alternative locations has become an increasingly relevant factor in shoring decisions. To improve flexibility and reduce the lead times of products to final consumers, several European firms have already nearshored from China to Eastern Europe or directly backshored at home.<sup>11</sup> As most Latin American and Caribbean countries are not geographically close to many other countries, the majority of the region would in principle lack this attractiveness factor. Yet, in the highly globalized world where new technologies connect people and countries regardless of geographical distance, the concept of proximity to markets becomes more nuanced. While geographical distance surely matters in influencing lead times and agility of transport, digitalization adoption and logistic capabilities can substantially affect the perceived flexibility of operations and proximity to markets (Sturgeon et al., 2017).

---

<sup>11</sup> Eurofound (European Foundation for the Improvement of Living and Working Conditions), "European Reshoring Monitor", <https://reshoring.eurofound.europa.eu> (accessed on 20 December 2022).

The remoteness index in table 2 measures this expanded concept of distance and includes – other than geographical proximity – broadband capacity, logistics capabilities and time required for trading across borders. According to the index, the proximity of Latin American and Caribbean countries to other markets is lower than that of the United States but, overall, close to that of China. Ultimately, while geographical distance might hinder relocations, particularly in those sectors where distance acquires particular importance, the distance of countries in the region from other markets does not seem to be insurmountable. Investments to improve logistics, infrastructure and adoption of new technology could certainly help.

In sum, our preliminary analysis suggests that the reshoring readiness of Latin America and the Caribbean is still limited. Many areas of weakness remain, from the diffusion of digital technologies to the quality of logistics infrastructure and of innovation systems.

## **6. Conclusions. What possible framework for public policies?**

In this paper we discussed the emerging trend of reshoring of international production, focusing on the current and likely dynamics of nearshoring to Latin American and Caribbean countries. We reviewed the different approaches of the literature to these phenomena, the driving forces and the implications for GVC reconfigurations. We analysed trade and value added to conclude that nearshoring to the region is still occurring to a limited extent. Finally, we proposed a measure of the reshoring readiness of the region, to highlight the areas of major strength and weakness in attracting and benefitting from relocations.

Our study reveals that very limited nearshoring of United States firms to Latin American and Caribbean countries has occurred so far. Although the region is not displacing others in this regard, Mexico is a relevant exception. Yet even though Mexico is gaining importance in terms of gross and intermediate imports to the United States, the analysis of trade in value added reveals that no major upgrading in Mexican production appears to be occurring. Moreover, given that the region, and particularly South America, is not near other, more advanced regions, nearshoring by MNEs from the United States or from other developed countries still appears to have limited potential.

In terms of reshoring readiness, Latin America and the Caribbean still suffers from substantial areas of weakness, from the diffusion of digital technologies to the quality of logistics infrastructure and innovation systems. The results of this analysis point to policy areas that clearly deserve attention. Logistics infrastructure needs to be improved in many countries, including digital infrastructure and the skills to access and adopt such technologies. In most countries, the science and technology systems also need to be strengthened to increase the attractiveness

of the region as potential backshoring destinations. However, the policy reach should extend beyond the level of individual countries. In this sense, the deeper regional integration in South America could be leveraged. Strengthening of regional value chains could be a viable alternative to increase international production ties and stimulate the internationalization of local suppliers. In this regard, international policy coordination would certainly be desirable, for better harmonized standards and regulations.

This study inevitably suffers from some limitations due to the paucity of firm-level and industry-level data available on the shoring phenomenon, as well as to the boundaries of the shoring phenomenon, which is in a continuous process of being redefined and changed. Future research will need to build new empirical evidence on firm-level sourcing and shoring decisions, explore the implications that current geopolitical developments and technological changes could have on shoring processes, and explore the different levels of policymaking available.

## References

- Alcácer, Juan, John Cantwell and Lucia Piscitello (2016). "Internationalization in the information age: A new era for places, firms, and international business networks?", *Journal of International Business Studies*, 47, pp. 499–512.
- Ancarani, Alessandro, Carmela Di Mauro, Luciano Fratocchi, Guido Orzes and Marco Sartor (2015). "Prior to reshoring: A duration analysis of foreign manufacturing ventures", *International Journal of Production Economics*, 169, pp. 141–155.
- Antràs, Pol, and Robert W. Staiger (2012). "Offshoring and the role of trade agreements", *American Economic Review*, 102(7), pp. 3140–3183.
- Ashby, Alison (2016). "From global to local: reshoring for sustainability", *Operations Management Research*, 9(3-4), pp. 75–88.
- Baldwin, Richard (2016). "The World Trade Organization and the future of multilateralism", *Journal of Economic Perspectives*, 30(1), pp. 95–116.
- Baldwin, Richard, and Javier Lopez-Gonzalez (2015). "Supply-chain trade: A portrait of global patterns and several testable hypotheses", *The World Economy*, 38(11), pp. 1682–1721.
- Bamber, Penny, Karina Fernandez-Stark and Daria Taglioni (2020). "Why global value chains remain essential for COVID-19 supplies". Voxeu.org, 27 May, <https://cepr.org/voxeu/blogs-and-reviews/why-global-value-chains-remain-essential-covid-19-supplies>.
- Barbieri, Paolo, Albachiara Boffelli, Stefano Elia, Luciano Fratocchi, Matteo Kalchschmidt and Danny Samson (2020). "What can we learn about reshoring after Covid-19?" *Operations Management Research*, 13(3), pp. 131–136.
- Bertoni, Ramiro, and Bruno Sebastian Perez Almansi (2022). "Cadenas globales de valor: Una mirada desde la periferia latinoamericana" [Global value chains: A view from the Latin American periphery]. *Fundación de Investigaciones para el Desarrollo (Fide): Coyuntura y Desarrollo*, 406(8), pp. 32–47.
- Brenton, Paul, Michael J. Ferrantino and Maryla Maliszewska (2022). *Reshaping Global Value Chains in Light of COVID-19: Implications for Trade and Poverty Reduction in Developing Countries*. (Washington, D.C.: World Bank).
- Buckley, Peter J., and Mark Casson (1976). "A long-run theory of the multinational enterprise", in Peter J. Buckley and Mark Casson, eds., *The Future of the Multinational Enterprise* (London: Palgrave Macmillan), pp. 32–65.
- Cadestin, Charles, Julien Gourdon and Przemyslaw Kowalski (2016). "Participation in global value chains in Latin America: Implications for trade and trade-related policy", OECD Trade Policy Papers, No. 192 (Paris: OECD Publishing).
- Casson, Mark, ed. (2013). *The Growth of International Business* (New York: Routledge).
- Chang, Ha-Joon, and Antonio Andreoni (2020). "Industrial policy in the 21st century", *Development and Change*, 51(2), pp. 324–351.
- Chen, Wenjie, and Fariha Kamal (2016). "The impact of information and communication technology adoption on multinational firm boundary decisions", *Journal of International Business Studies*, 47(5), pp. 563–576.

- Dachs, Bernhard, and Christoph Zanker (2015). "Backshoring of production activities in European manufacturing", MPRA Paper, No. 63868, 12 May (Munich: University Library of the LMU Munich).
- Dachs, Bernhard, Steffen Kinkel and Angela Jäger (2019). "Bringing it all back home? Backshoring of manufacturing activities and the adoption of Industry 4.0 technologies", *Journal of World Business*, 54(6), art. 101017.
- Dachs, Bernhard, and Steffen Kinkel (2013). "Backshoring of production activities in European manufacturing – Evidence from a large-scale survey", 20th International Annual EurOMA Conference, Dublin, Ireland, 7–12 June.
- De Backer, Koen, Timothy De Stefano, Carlo Menon and Jung Ran Suh (2018). "Industrial robotics and the global organisation of production", OECD Science, Technology and Industry Working Papers, No. 2018/03 (Paris: OECD Publishing).
- De Backer, Koen, Carlo Menoni, Isabelle Desnoyers-James and Laurent Moussiégt (2016), "Reshoring: Myth or reality?", OECD Science, Technology and Industry Policy Papers, No. 27 (Paris: OECD Publishing).
- Delera, Michele, Carlo Pietrobelli, Elisa Calza and Alejandro Lavopa (2020). "Does value chain participation facilitate the adoption of industry 4.0 technologies in developing countries?", *World Development*, 52(4), art. 105788.
- Dunning, John H. (1980). "Toward an eclectic theory of international production: Some empirical tests", *Journal of International Business Studies*, 11(1), pp. 9–31.
- \_\_\_\_\_ (1988). "The theory of international production", *The International Trade Journal*, 3(1), pp. 21–66.
- \_\_\_\_\_ (1998). "Location and the multinational enterprise: A neglected factor?", *Journal of International Business Studies*, 29(1), pp. 45–66.
- \_\_\_\_\_ (2000). "The eclectic paradigm as an envelope for economic and business theories of MNE activity", *International Business Review*, 9(2), pp. 163–190.
- Dunning, John H., and Sarianna M. Lundan (2008). *Multinational Enterprises and the Global Economy* (Cheltenham: Edward Elgar Publishing).
- Dunning, John H., and Alan M. Rugman (1985). "The influence of Hymer's dissertation on the theory of foreign direct investment", *The American Economic Review*, 75(2), pp. 228–232.
- ECLAC (Economic Commission for Latin America and the Caribbean) (2020). *Sectors and Businesses Facing COVID-19: Emergency and Reactivation* (Santiago: United Nations).
- Elia, Stefano, Luciano Fratocchi, Paolo Barbieri, Albachiara Boffellid and Matteo Kalchschmidt (2021). "Post-pandemic reconfiguration from global to domestic and regional value chains: The role of industrial policies", *Transnational Corporations*, 28(2), pp. 67–96.
- Ellram, Lisa M. (2013). "Offshoring, reshoring and the manufacturing location decision", *Journal of Supply Chain Management*, 49(2), pp. 3–5.
- Ellram, Lisa M., Wendy L. Tate and Kenneth J. Petersen (2013). "Offshoring and reshoring: An update on the manufacturing location decision", *Journal of Supply Chain Management*, 49(2), pp. 14–22.

- Enderwick, Peter, and Peter J. Buckley (2020). "Rising regionalization: Will the post-COVID-19 world see a retreat from globalization?", *Transnational Corporations*, 27(2), p. 99–112.
- European Commission (2020). "Report on the protection and enforcement of intellectual property rights in third countries", Commission Staff Working Document, SWD(2015) 132 final, 1 July (Brussels: European Commission).
- Feenstra, Robert C. (2017). "Statistics to measure offshoring and its impact," NBER Working Paper, No. 23067 (Cambridge, Massachusetts: National Bureau of Economic Research).
- Foerstl, Kai, Jon F. Kirchoff and Lydia Bals (2016). "Reshoring and insourcing: Drivers and future research directions." *International Journal of Physical Distribution & Logistics Management*, 46 (5), pp. 492–515.
- Fratocchi, Luciano, Alessandro Ancarani, Paolo Barbieri, Carmela Di Mauro, Guido Nassimbeni, Marco Sartor, Matteo Vignoli and Andrea Zanoni (2015). "Manufacturing back-reshoring as a nonlinear internationalization process", in Rob van Tulder, Alain Verbeke and Rian Drogendijk, eds., *The Future of Global Organizing* (Bingley, United Kingdom: Emerald Group Publishing), pp. 365–403.
- Fratocchi, Luciano, Carmela Di Mauro, Paolo Barbieri, Guido Nassimbeni and Andrea Zanoni (2014). "When manufacturing moves back: Concepts and questions", *Journal of Purchasing and Supply Management*, 20(1), pp. 54–59.
- Gereffi, Gary, and Joonkoo Lee (2012). "Why the world suddenly cares about global supply chains", *Journal of Supply Chain Management*, 48(3), pp. 24–32.
- Golgeci, Ismail, Harun Emre Yildiz and Ulf R. Andersson (2020). "The rising tensions between efficiency and resilience in global value chains in the post-COVID-19 world", *Transnational Corporations*, 27(2), pp. 127–141.
- Gray, John V., Gökçe Esenduran, M. Johnny Rungtusanatham and Keith Skowronski (2017). "Why in the world did they reshore? Examining small to medium-sized manufacturer decisions", *Journal of Operations Management*, 49, pp. 37–51.
- Gray, John V., Keith Skowronski, Gökçe Esenduran and M. Johnny Rungtusanatham (2013). "The reshoring phenomenon: What supply chain academics ought to know and should do", *Journal of Supply Chain Management*, 49(2), pp. 27–33.
- Gylling, Michael, Jussi Heikkilä, Kari Jussila and Markku Saarinen (2015). "Making decisions on offshore outsourcing and backshoring: A case study in the bicycle industry", *International Journal of Production Economics*, 162, pp. 92–100.
- Hymer, Stephen H. (1976). *International Operations of National Firms* (Cambridge, Massachusetts: MIT Press).
- Javorcik, Beata (2021). "Reshaping of global supply chains will take place, but it will not happen fast", *Journal of Chinese Economic and Business Studies*, 18(4), pp. 321–325.
- \_\_\_\_\_ (2020). "Global supply chains will not be the same in the post-COVID-19 world", in Richard Baldwin and Simon Evenett, eds., *COVID-19 and Trade Policy: Why Turning Inward Won't Work* (Washington, D.C.: CEPR Press), pp. 111–116.
- Kinkel, Steffen (2014). "Future and impact of backshoring – Some conclusions from 15 years of research on German practices", *Journal of Purchasing and Supply Management*, 20(1), pp. 63–65.

- Kinkel, Steffen, and Spomenka Maloca (2009). "Drivers and antecedents of manufacturing offshoring and backshoring – A German perspective", *Journal of Purchasing & Supply Management*, 15(3), pp. 154–165.
- Kinkel, Steffen, and Christoph Zanker (2013). "New patterns of German production relocation and back shoring activities after the global economic crisis", 20th International Annual EurOMA Conference, Dublin, Ireland, 7–12 June.
- Lampón, Jesús F., Javier González-Benito and José M. García-Vázquez (2015). "International relocation of production plants in MNEs: Is the enemy in our camp?", *Papers in Regional Science*, 94(1), pp. 127–139.
- Lee, Keun, and Taeyoung Park (2021). "Changing GVC in post-pandemic Asia: Korea, China and Southeast Asia", SIER Working Paper Series, No. 144.2021 (Seoul: Institute of Economic Research, Seoul National University).
- Lin, Jesse, and Christian Lannig (2020). "Here's how global supply chains will change after COVID-19", WEF (World Economic Forum) blog, 6 May.
- Maloney, William Francis, Daniel Riera-Crichton, Elena Ivanova Ianchovichina, Guillermo Vuletin and Guillermo Beylis (2023). *The Promise of Integration: Opportunities in a Changing Global Economy* (Washington, D.C.: World Bank).
- Miroudot, Sébastien (2020). Resilience versus robustness in global value chains: Some policy implications", in Richard Baldwin and Simon Evenett, eds., *COVID-19 and Trade Policy: Why Turning Inward Won't Work* (Washington, D.C.: CEPR Press), pp. 117–130.
- Office of the United States Trade Representative (2020). 2020 Special 301 Report, April. [https://ustr.gov/sites/default/files/2020\\_Special\\_301\\_Report.pdf](https://ustr.gov/sites/default/files/2020_Special_301_Report.pdf).
- Piatanesi, Benedetta, and Josep-Maria Arauzo-Carod (2019). "Backshoring and nearshoring: An overview", *Growth and Change*, 5(3), pp. 806–823.
- Pietrobelli, Carlo (2022). "New industrial innovation policies in a world of global value chains", in Keun Lee, Jeon Dong Lee, Slavo Radosevic, Dirk Meissner and Nicholas Vonortas, eds., *The Challenges of Technology and Economic Catch-Up in Emerging Economies* (Oxford: Oxford University Press), pp. 436–458.
- Pietrobelli, Carlo, and Roberta Rabellotti (2007). *Upgrading to Compete. Global Value Chains, SMEs and Clusters in Latin America* (Cambridge, Massachusetts: Harvard University Press).
- \_\_\_\_\_ (2011). "Global value chains meet innovation systems: Are there learning opportunities for developing countries?", *World Development*, 39(7), pp. 1261–1269.
- Pietrobelli, Carlo, Roberta Rabellotti and Marco Sanfilippo (2011). "Chinese FDI strategy in Italy: The 'Marco Polo' effect", *International Journal of Technological Learning, Innovation and Development*, 4(4), pp. 277–291.
- Pisano, Gary P., and Willy C. Shih (2009). "Restoring American competitiveness", *Harvard Business Review*, 87(7/8), pp. 114–125.
- Ponte Stefano, Gary Gereffi and Gale Raj-Reichert, eds. (2019). *Handbook on Global Value Chains* (Cheltenham, United Kingdom: Edward Elgar).
- Stentoft, Jan, Jan Olhager, Jussi Heikkilä and Lisa Thoms (2016). "Manufacturing backshoring: A systematic literature review", *Operations Management Research*, 9(3-4), pp. 53–61.

- Sturgeon, Timothy J., Thomas Farole, Leonardo Ortega Moncada and Carlo Pietrobelli (2017). "Overcoming scale and distance and upgrading in global value chains", in Commonwealth Secretariat, *Future Fragmentation Processes. Effectively Engaging with the Ascendancy of Global Value Chains*, London, pp. 15–27.
- Tate, Wendy L. (2014). "Offshoring and reshoring: US insights and research challenges", *Journal of Purchasing and Supply Management*, 20(1), pp. 66–68.
- Tate, Wendy L., Lisa M. Ellram, Tobias Schoenherr and Kenneth J. Petersen (2014). "Global competitive conditions driving the manufacturing location decision", *Business Horizons*, 57(3), pp. 381–390.
- Thun, Eric, Daria Taglioni, Timothy Sturgeon and Mark P. Dallas (2022). "Massive modularity: Understanding industry organization in the Digital Age: The case of mobile phone handsets", Policy Research Working Papers, No. 10164 (Washington, D.C.: World Bank Group).
- Timmer, Marcel P., Abdul Azeez Erumban, Bart Los, Robert Stehrer and Gaaitzen J. de Vries (2014). "Slicing up global value chains", *Journal of Economic Perspectives*, 28(2), pp. 99–118.
- UNCTAD (United Nations Conference on Trade and Development) (2018). *World Investment Report 2018: Investment and New Industrial Policies* (New York and Geneva: United Nations).
- \_\_\_\_\_(2020). *World Investment Report 2020: International Production Beyond the Pandemic* (Geneva: United Nations).
- \_\_\_\_\_(2021). *Catching Technological Waves. Innovation with Equity. Technology and Innovation Report 2021* (New York and Geneva: United Nations).
- UNIDO (United Nations Industrial Development Organization) (2019). *Annual Report 2019* (Vienna: United Nations).
- Vanchan, Vida, Rachel Mulhall and John Bryson (2018). "Repatriation or reshoring of manufacturing to the US and UK: dynamics and global production networks or from here to there and back again", *Growth and Change*, 49(1), pp. 97–121.
- World Bank (2020). *World Development Report 2020: Trading for Development in the Age of Global Value Chains* (Washington, D.C.: World Bank).



## Appendix

**Appendix table: Attractiveness indicators description and data sources**

Variable	Domain	Description	Source	Year
Digital Adoption Index	Digitalization	A composite index that measures the extent of spread of digital technologies. It is based on three sectoral sub-indices to measure digital technology adoption by the key agents in an economy: people, businesses (firms) and governments.	World Bank, <a href="https://data.worldbank.org">https://data.worldbank.org</a>	2016
Individuals using the Internet	Human capital/digitalization	Individuals who have used the Internet (from any location) in the preceding three months. The Internet can be used through a computer, mobile phone, personal digital assistant, games machine, digital TV or other device.	International Telecommunication Union (ITU), <a href="http://www.itu.int/en/ITU/Statistics">www.itu.int/en/ITU/Statistics</a>	2019
Logistics Performance Index	Logistics	Reflects perceptions of a country's logistics on the basis of six dimensions: efficiency of customs clearance process, quality of trade- and transport-related infrastructure, ease of arranging competitively priced shipments, quality of logistics services, ability to track and trace consignments, and frequency with which shipments reach the consignee within the scheduled time.	World Bank and Turku School of Economics, Logistic Performance Index Surveys	2018
Human Capital Index (HCI)	Human capital	Calculates the contributions of health and education to worker productivity. The score measures the productivity of a future worker or child born today relative to the benchmark of full health and complete education.	World Bank, <a href="https://data.worldbank.org">https://data.worldbank.org</a>	2020
Upper secondary educational attainment	Human capital	Refers to the highest level of education that an individual has completed. The percentage of the adult (25 years or older) population that completed upper secondary education is the percentage of adults who completed higher-level education to prepare for tertiary education or obtain specialized skills relevant to employment.	UNESCO (UIS), <a href="http://data.uis.unesco.org">http://data.uis.unesco.org</a>	2018
Research and development expenditure	Science, technology and innovation	The total intramural expenditure on gross domestic product in the national territory during a specific reference period expressed as a percentage of the gross domestic product of the national territory.	UNESCO (UIS), <a href="http://data.uis.unesco.org">http://data.uis.unesco.org</a>	2018

**Appendix table: Attractiveness indicators description and data sources (Concluded)**

Variable	Domain	Description	Source	Year
Researchers per million inhabitants	Science, technology and innovation	Number of professionals engaged in the conception or creation of new knowledge (who conduct research and improve or develop concepts, theories, models, techniques instrumentation, software or operational methods) during a given year expressed as a proportion of a population of one million.	UNESCO (UIS), <a href="http://data.uis.unesco.org">http://data.uis.unesco.org</a>	2018
Intellectual Property Rights	IPR protection	Calculated from three components: intellectual property rights protection, patent protection and copyright piracy. Data related to intellectual property rights protection are drawn from the WEF Executive Opinion Survey. Data related to patent protection are drawn from the Patent Rights Index, and information about copyright piracy is derived from the BSA Global Software Survey.	Property Rights Alliance, <a href="http://www.propertyrightsalliance.org">www.propertyrightsalliance.org</a>	2020
Resilience Index	Risk	Summary measure of resilience that provides an indication of countries' relative firm resilience to disruptive events. The overall index is a composite measure including three major kinds of factors: economic (productivity, political risk, oil intensity and urbanization rate), risk quality (exposure to natural hazards, natural hazards risk quality, fire risk quality, cyber risk) and supply chain (control of corruption, quality of infrastructure, corporate governance and supply chain visibility).	FM Global, <a href="http://www.fmglobal.com">www.fmglobal.com</a>	2020
Remoteness Index (RI)	Proximity to markets	Measure of remoteness incorporating both geographical distance and an expanded measure of distance that includes broadband capacity, logistic capabilities and time required in trading across borders.	Sturgeon et al. (2017)	2015

Source: Authors' compilation.