

# Global Value Chains and Latin America: A Technical Note

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Integration and Trade  
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# Global Value Chains and Latin America: A Technical Note

Juan Blyde and Danielle Trachtenberg  
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## Abstract

Participation in global value chains (GVCs) is lower in Latin America and the Caribbean than in other regions. This technical note uses measures of forward and backward linkages to examine Latin America's participation in GVCs and the recent global slowdown in intra- and extraregional supply chains.

**JEL Codes:** F10

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## 1. INTRODUCTION

Global value chains (GVCs) describe the breaking up of the production process into different stages that take place in different countries. At each stage in the production process, an unfinished product gains value-added and then crosses national borders until the final product is complete. For example, yarn and fiber are imported into Honduras where they are processed into cloth and textiles and exported as finished products or as inputs for other textiles or products. The rapid expansion of GVCs started in the 1990s and peaked in the years immediately following the global financial crisis (Degain, Meng, and Wang, 2017). Historically, the participation of Latin America and the Caribbean (LAC) in GVCs has been lower than that of other regions such as Asia and the European Union (IDB, 2014). The analysis in this section analyzes the low participation of LAC and how the recent slowdown in GVCs has impacted participation.

## 2. BACKWARD AND FORWARD LINKAGES

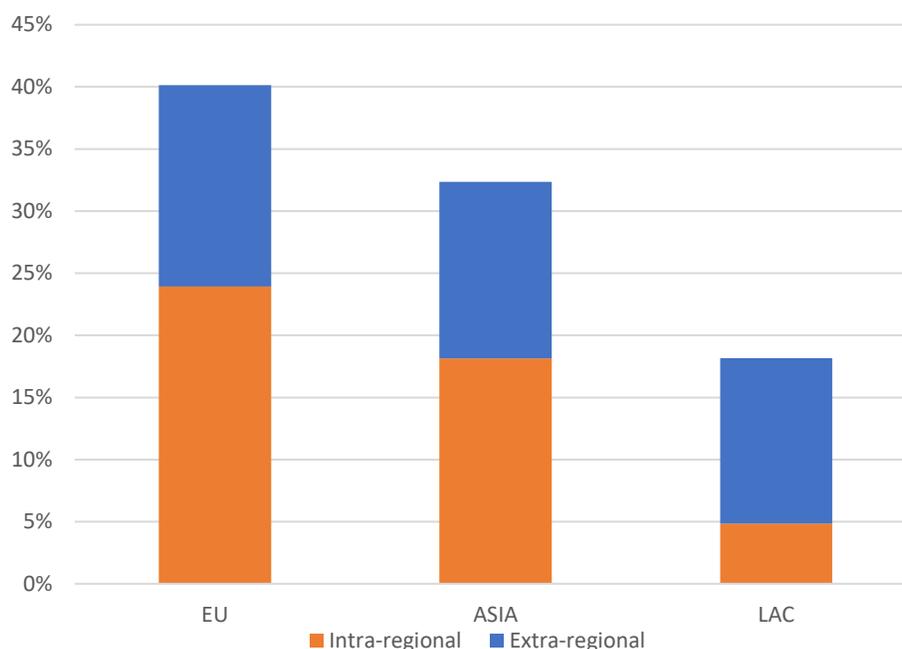
Figure 1 shows a measure of backward participation in global value chains, calculated as foreign value-added as a share of a country's exports for three regions in 2015.<sup>1</sup> Backward participation in GVCs captures the extent to which foreign goods and services are used in the production of domestic goods that are exported. The yarn that is imported into Honduras and that is woven into cloth for export is an example of Honduras' backward participation in GVCs. Of the three regions in figure 1, Latin America and the Caribbean has the lowest level of backward participation, representing 18% of exports. By comparison, backward participation stands at 32% in Asia and 40% in the European Union. Foreign goods and services in domestic exports can come from intra- or extraregional source countries. Intraregional foreign value-added in LAC is 5%, which is considerably less than intraregional foreign value-added in Asia (18%) or the European Union (24%). From figure 1, it is clear that Latin American and Caribbean countries are lagging behind other regions as importers of intermediate inputs that are used in domestic exports, particularly when it comes to intraregional supply chains.

Figure 2 shows forward participation in GVCs, measured as the amount of domestic value-added in foreign exports as a share of domestic exports. Forward linkages capture the extent to which domestically produced goods and services are used in the production of foreign exports. For example, the cloth exported from Honduras may go to a factory in Mexico where it is made into a shirt that is exported to the United States. LAC's total participation in forward linkages is smaller than that of other regions, although it does not lag behind other regions in this regard as much as is the case with backward linkages, as shown in figure 1. Intraregional forward linkages for LAC are again especially small when compared to other regions.

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<sup>1</sup> Data are from the EORA MRIO database. Backward participation is calculated as the ratio of foreign value-added used in domestic production to domestic exports. Forward participation is calculated as the ratio of domestic value-added used in foreign exports to domestic exports.

**FIGURE 1. FOREIGN VALUE-ADDED IN DOMESTIC EXPORTS, 2015, PERCENTAGE OF TOTAL DOMESTIC EXPORTS**



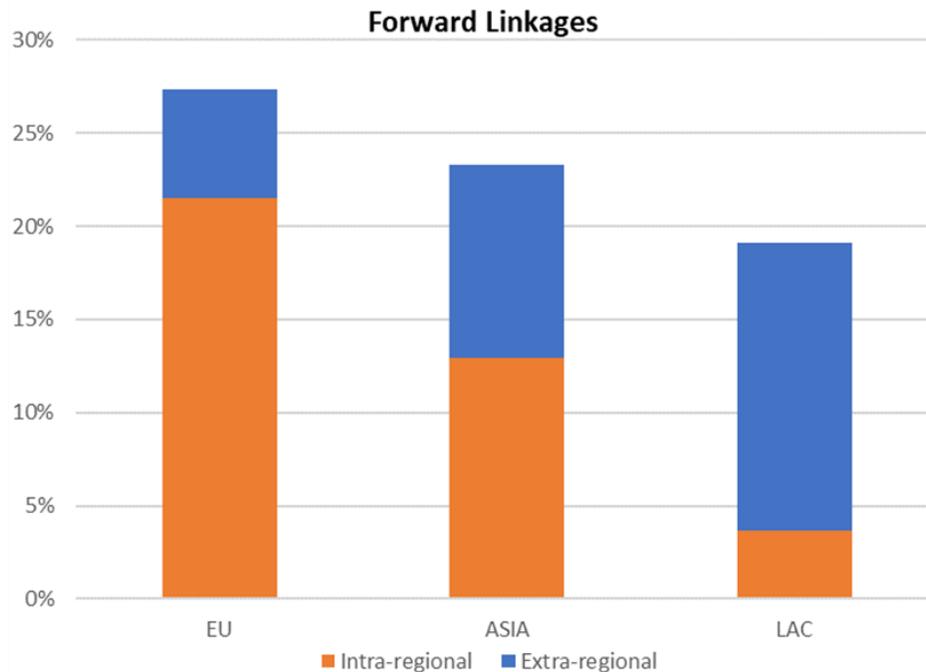
Source: EORA Global MRIO

Low participation in GVCs for LAC is in part a reflection of policies that restrict trade. There is a fragmented network of preferential trade agreements (PTAs) and many intra- and extraregional bilateral and multilateral agreements in the region but no true worldwide agreement. The lack of synchronization of preferences and rules between agreements can impede intraregional trade and the formation of sophisticated supply chains. For example, rules of origin (RoOs), the criteria determining how much imported content from nonmember countries can be used in the production of exports while receiving preferential treatment under a PTA, differ between PTAs (IDB, 2018). Differences in RoOs between agreements mean that a product largely originating in the member countries of one PTA may not satisfy the RoOs of another PTA, even if there are common members, which puts the exporting country at a disadvantage in the markets of the latter PTA. This lack of coordination between agreements in LAC keeps both intra- and extraregional supply chains fragmented, preventing the formation of longer GVCs. Other obstacles to fully liberalized intraregional trade include reducing remaining trade barriers on goods that are exempted from trade agreements, consolidating and harmonizing PTAs, and increasing PTA coverage to include the approximately 20% of regional trade that does not fall under any PTA (IDB, 2018). Additionally, lowering extrabloc barriers to trade could increase both intra- and extraregional supply chains as extraregional PTAs have a positive impact on intraregional trade (IDB, 2018).

High trade frictions for products that more likely to be part of GVCs, such as manufactured intermediate inputs, also can hinder the growth of supply chains. Johnson and Noguera (2016) analyze the value-added-to-gross-exports ratio—the share of exports that is domestic value created within a country's borders—for a number of middle- and high-income countries from 1970 to 2009. During this period of increasing international integration, all countries saw their domestic value-added-to-exports ratio decline, reflecting a greater degree of foreign value-added used in domestic production, in other words, greater participation in GVCs. The decline in the value-added-to-exports ratio is primarily explained by declining trade frictions over this period,

particularly for manufactured inputs. As shipping costs and barriers to trade decreased, countries increased their participation in GVCs by importing more manufactured inputs to be used in domestic production.

**FIGURE 2. DOMESTIC VALUE-ADDED IN FOREIGN EXPORTS, 2015, PERCENTAGE OF TOTAL DOMESTIC EXPORTS**



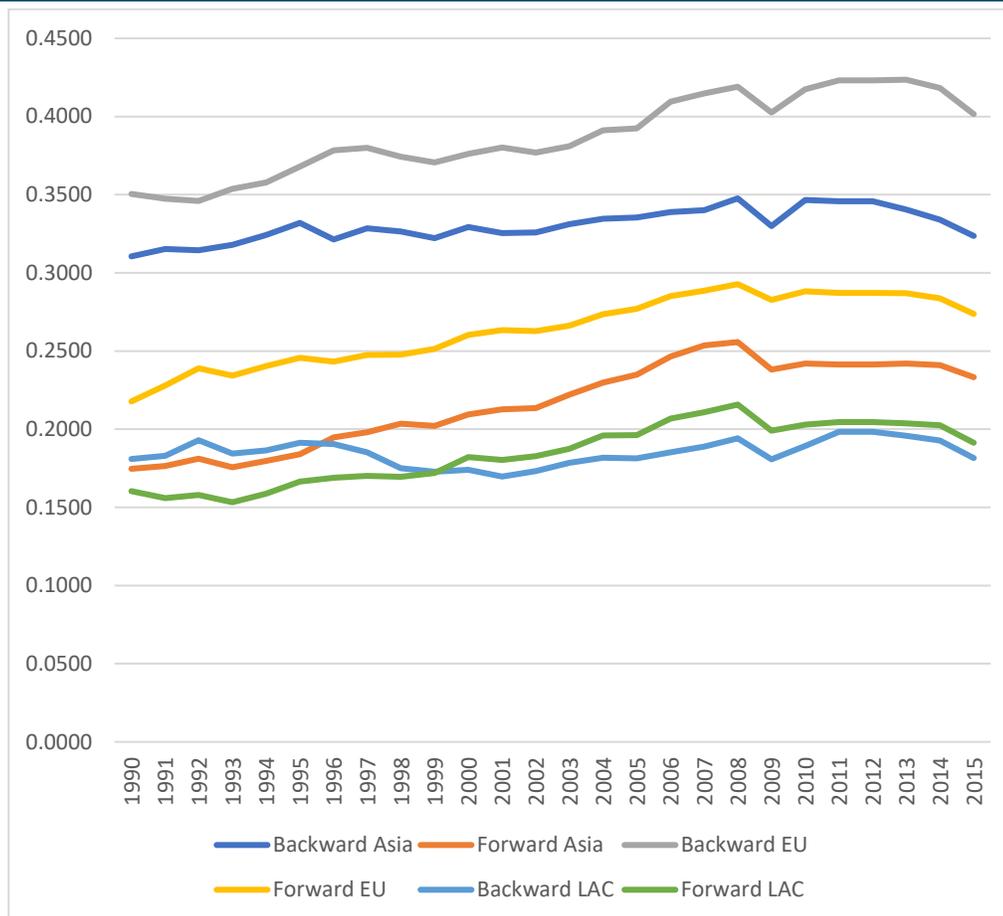
Source: EORA Global MRIO

The largest declines in domestic value-added-to-exports were experienced by countries with high growth and between nearby trading partners and RTA members. Of the four LAC countries in the sample, Mexico experienced the largest decline in its value-added-to-exports share, driven by an increase in the share of Mexican exports that are manufactured goods, which typically have higher foreign value-added than nonmanufacturing exports and were subject to declining trade frictions for manufactured inputs during this time. Chile also experienced a moderate decline in its domestic value-added-to-exports ratio, reflecting its high participation in GVCs relative to other LAC countries through its liberalized trade regime and network of PTAs. Argentina and Brazil had small declines in domestic value-added-to-exports, suggesting that trade frictions around manufactured inputs remain high in these countries and prevent them from engaging more in GVCs.

### 3. SLOWDOWN IN GVCs

Figure 3 plots backward and forward linkages for Latin America, Asia, and the European Union from 1990 to 2015. Backward and forward linkages increased for every region in the 2000s before dropping steeply in 2009 during the global financial crisis. Although participation in GVCs increased during the recovery period, there is a noticeable slowdown or outright decline in every region from 2010 on. The slowdown of GVCs affected Latin America and other regions similarly, even though Latin America's participation in GVCs is lower. Backward linkages declined by over 2 percentage points (p.p.) from 2011 to 2015 in Asia and the European Union and by 1.7 p.p. in LAC. During the same period, forward linkages in both LAC and the European Union declined by 1.3 p.p.. Forward linkages in Asia were the least affected, decreasing by only 0.8 p.p. from 2011 to 2015.

**FIGURE 3. BACKWARD AND FORWARD LINKAGES, 1990–2015, PERCENTAGE OF TOTAL DOMESTIC EXPORTS**

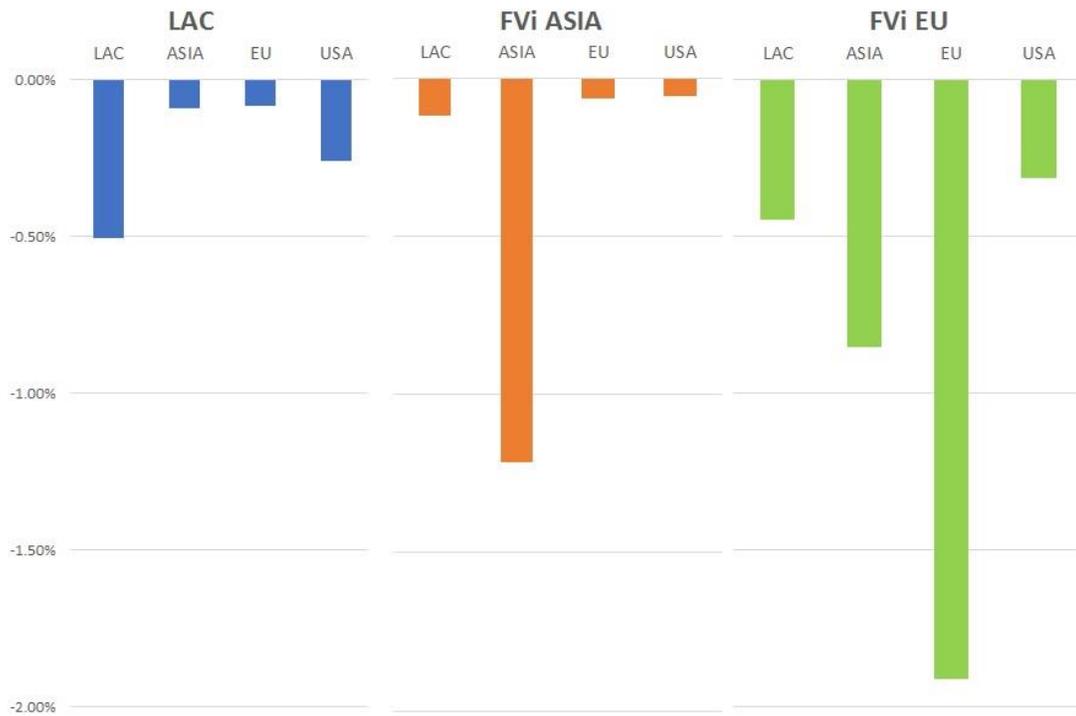


Source: EORA Global MRIO

Several trends may be influencing the slowdown by leading to increased abilities to produce different intermediate goods and keep more stages of the value chain within a country's borders. These trends include the upgrading of emerging markets such as China to producing higher value-added goods while also continuing to produce lower value-added inputs, technological innovation in developed countries, and reshoring (Degain, Meng, and Wang, 2017). Other contributing factors include the slowing of the decline in the costs of shipping goods, rising protectionist sentiments, and higher costs for multinationals paying for global operations relative to local firms (Degain, Meng, and Wang, 2017; The Economist, 2019). Ferrantino and Taglioni (2014) note that complex products produced in GVCs are more sensitive to global downturns. Coupled with rising wages in the developing world, it is possible that undertaking investments in GVCs with long supply chains is riskier for businesses today than it was in the 2000s.

Figure 4 shows the decline in backward participation from each region from 2011 to 2015. The slowdown in backward participation is apparent. All regions decrease their backward participation in GVCs from all other regions, particularly from their own region. Intraregional backward participation declines to a much larger degree than extraregional backward participation for LAC, Asia, and the European Union. This pattern suggests that regional linkages are the first to be lost when GVCs break down. Economies in the same region may specialize in similar activities and decide to move production activities for their inputs within national borders to retain control over costs or simply because they have expanded production capabilities to include upstream stages.

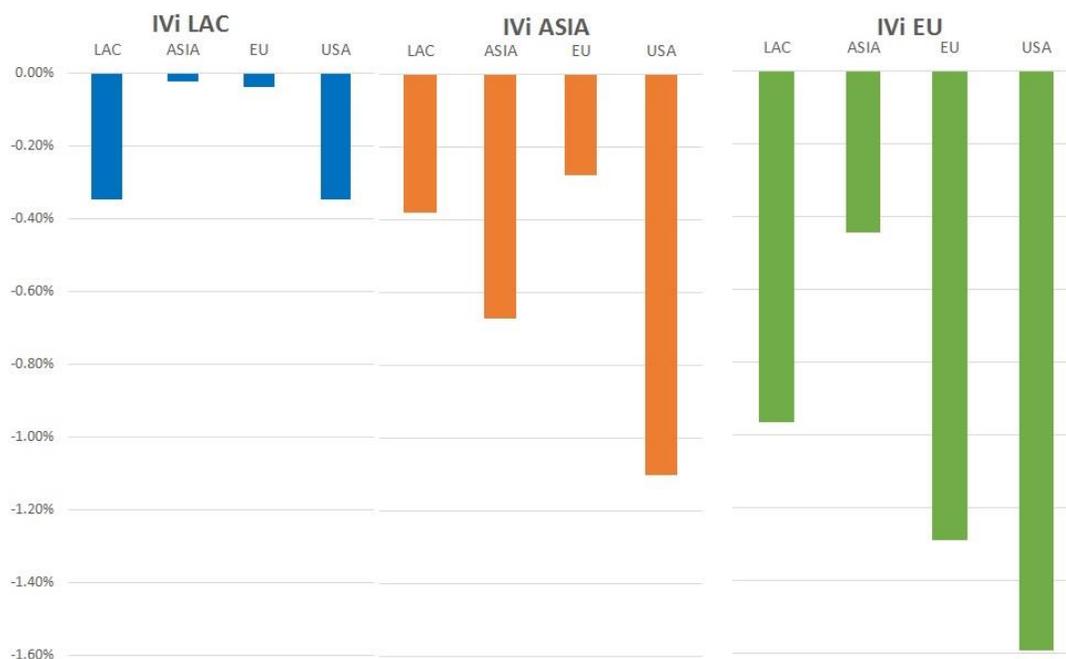
**FIGURE 4. CHANGE IN BACKWARD LINKAGES, BY SUPPLIER AND EXPORTER REGION, 2011–2015, PERCENTAGE POINTS**



Source: EORA Global MRIO

The decline from 2011 to 2015 in forward linkages to regions one stage downstream is shown in figure 5. As with backward linkages, there is a universal slowdown in forward participation. For all regions, forward linkages with the United States decrease by more than with any other region. Declines in intraregional forward linkages follow close behind. For LAC, declines in domestic value-added sent to Asia and Europe are very small and are indicative in part of Latin America's low engagement in GVCs with these regions.

**FIGURE 5. CHANGE IN FORWARD LINKAGES, BY PARTNER AND EXPORTER REGION, 2011–2015, PERCENTAGE POINTS**



Source: EORA Global MRIO

Given the trends in figures 3 through 5, is it likely that the slowdown in GVC participation will continue in the short to medium term as multinationals adjust their production strategies to take into account greater domestic capabilities and the rising costs, both financial and political, of globalized production. This implies that if Latin America did not fully take advantage of the emergence of GVCs in the past, looking forward it is going to be even harder. Policies that reduce intra- and extraregional trade barriers for manufactured inputs and simplify the network of preferences and RoOs in the region will help LAC countries overcome their low participation in GVCs. Furthermore, a focus on increasing intraregional supply chains will help the region remain resilient to the current and future slowdowns in GVCs.

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