2018

International Trade Outlook
for Latin America and the Caribbean

Stronger regional integration urgent
to counter impact of trade conflicts

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Explanatory notes:

- Three dots (...) indicate that data are not available or are not separately reported.
- A dash (-) indicates that the amount is nil or negligible.
- A full stop (.) is used to indicate decimals.
- The word "dollars" refers to United States dollars, unless otherwise specified.
- A slash (/) between years (e.g. 2013/2014) indicates a 12-month period falling between the two years.
- Individual figures and percentages in tables may not always add up to the corresponding total because of rounding.

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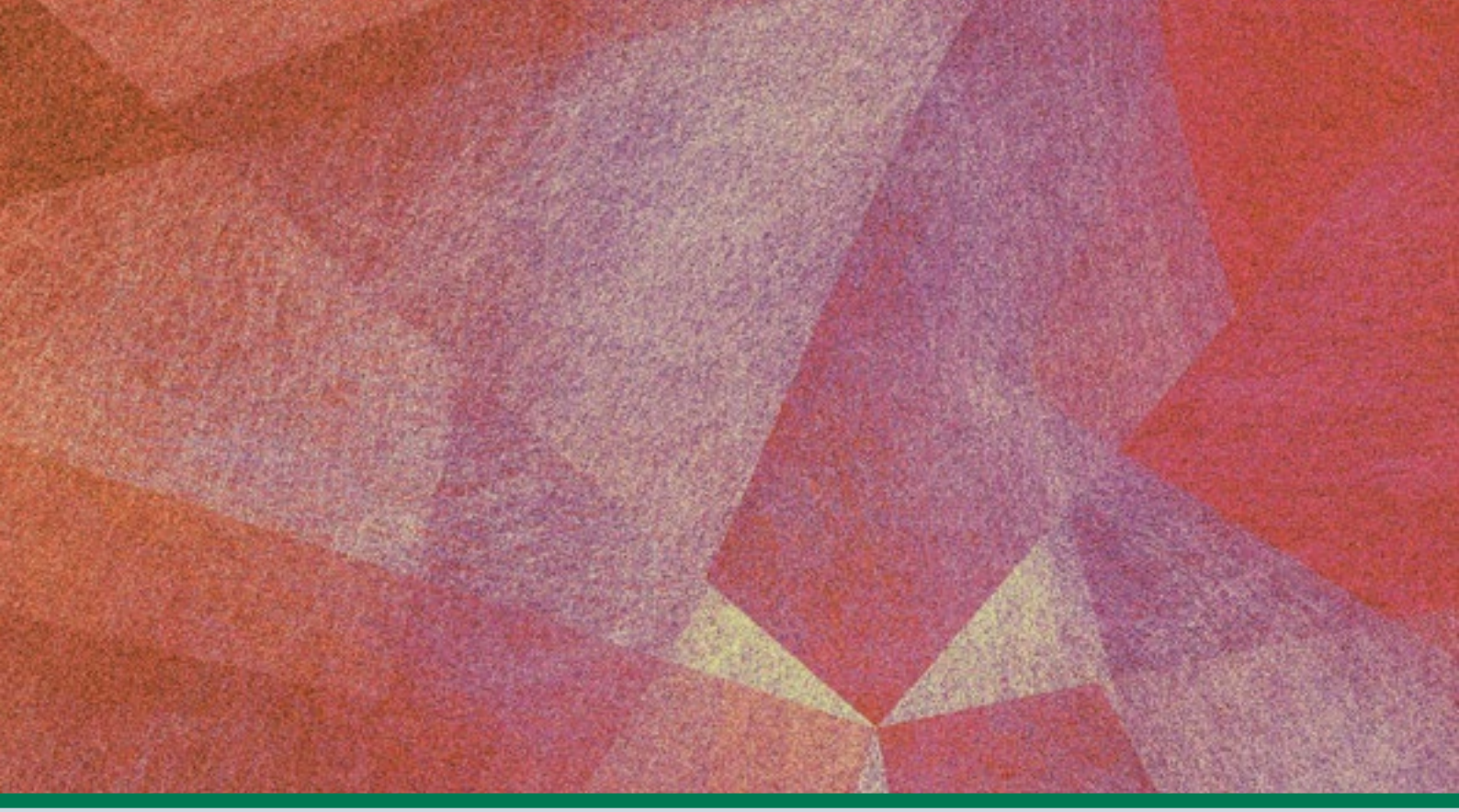
Presentation

This edition of International Trade Outlook for Latin America and the Caribbean covers 2018 and is divided into three chapters. Chapter I analyses the impact of divergent global growth and trade tensions on trade in the region. The global economic and trade growth seen in 2017 slackened in 2018. Advanced and developing countries have also shown more uneven growth patterns than in 2017: while the United States, China and India remained buoyant, the eurozone, Japan and several emerging countries posted weaker performances. In the developed countries, unemployment fell to pre-financial-crisis levels, but wages remain stagnant and inequality continued to worsen. It is thus apparent that, a full decade after the outbreak of the crisis, global economic recovery remains fragile. This is fuelling dissatisfaction with globalization, as reflected by mounting trade tensions, particularly between the United States and China. In this context, the region has posted a second year of gains in export values, after the sharp fall between 2012 and 2016. By volume, however, the region's exports are projected to grow by less than half the rate of increase in exports by developing economies overall. The current trade tensions could boost the region's exports in the short term, but further protectionist escalation would pose serious risks to the global economy and, thus, to the region as well.

Chapter II examines the share of Latin America and the Caribbean in global trade in minerals and metals. The region overall is a net exporter in this sector; however, given the typically low level of processing of its exports, it has the largest share in this category of primary products of all regions in the world. The proportion of raw materials in the region's mineral and metal exports has almost doubled over the past 20 years. This is largely because of the increasing shares of the region's exports going to China and the rest of Asia, where demand is concentrated in raw materials such as iron and copper ores. This is a cause for concern, because of the well-known problems associated with dependency on exports of mining commodities, including the vulnerability of exports, growth and fiscal revenues to price fluctuations, limited value added and poor diversification into new products and services, as well as environmental damage of various kinds. The region has major reserves of a number of metals that are crucial for the production of technologies to combat climate change, which opens up —until recently unprecedented— prospects for simultaneous progress in sustainability and industrial and export diversification. However, experience indicates that this progress will not occur spontaneously in response to market price signals, but will require active industrial and technology policies.

Chapter III examines whether cross-border e-commerce has the potential to galvanize and diversify exports from the region. Cross-border e-commerce refers to transactions for products and services that are ordered online, platform-enabled, or delivered online. The share of Latin America and the Caribbean in global cross-border e-commerce will rise from 2.6% in 2014 to around 5.3% in 2020. The region's consumption of goods imported over foreign e-platforms has increased rapidly, but its export of products over this medium has not risen by a similar measure. Work is needed on four areas to enable businesses and consumers in Latin America and the Caribbean to engage more in cross-border e-commerce. First, the region needs to boost the regional digital market. In particular, it is necessary to create legal and technical conditions to facilitate the electronic exchange of trade-related data, improve the interoperability of digital regulations among countries and generate greater consumer confidence, by improving cybersecurity and consumer protection. Second, efforts are needed to digitalize and simplify financing for trade, including support for suppliers of alternative financing. Third, customs and postal services must be modernized and adapted to the needs of cross-border e-commerce. A fourth priority is to reduce the costs of cross-border online payments.



Summary

A. Trade tensions are worsening the international context

1. Global overview

The optimism generated by the synchronized growth of the world's leading economies in 2017 has been tempered over the course of 2018. The United States will grow more this year than it did in 2017, but the eurozone and Japan are slowing down. Among the developing countries, China and India have maintained strong growth rates, while other countries —including Argentina, South Africa and Turkey— have seen their economies slow considerably or even contract. In this context, growth projections for the global economy have been revised downward for 2018 and 2019.

The fragility of the economic recovery that began in 2017 highlights the difficulties faced by traditional macroeconomic policymaking since the onset of the global financial crisis. Quantitative easing was the main instrument used by advanced economies to stimulate consumption, investment and employment. However, the decade since the crisis has been marked by slow growth, especially in the eurozone. In addition, although unemployment has returned to pre-crisis levels in Europe, Japan and the United States, employment quality has deteriorated, which has led to a decrease in stable jobs and significant wage stagnation. This has, in turn, fuelled rising inequality. The combination of all these factors has fed discontent with globalization in advanced countries.

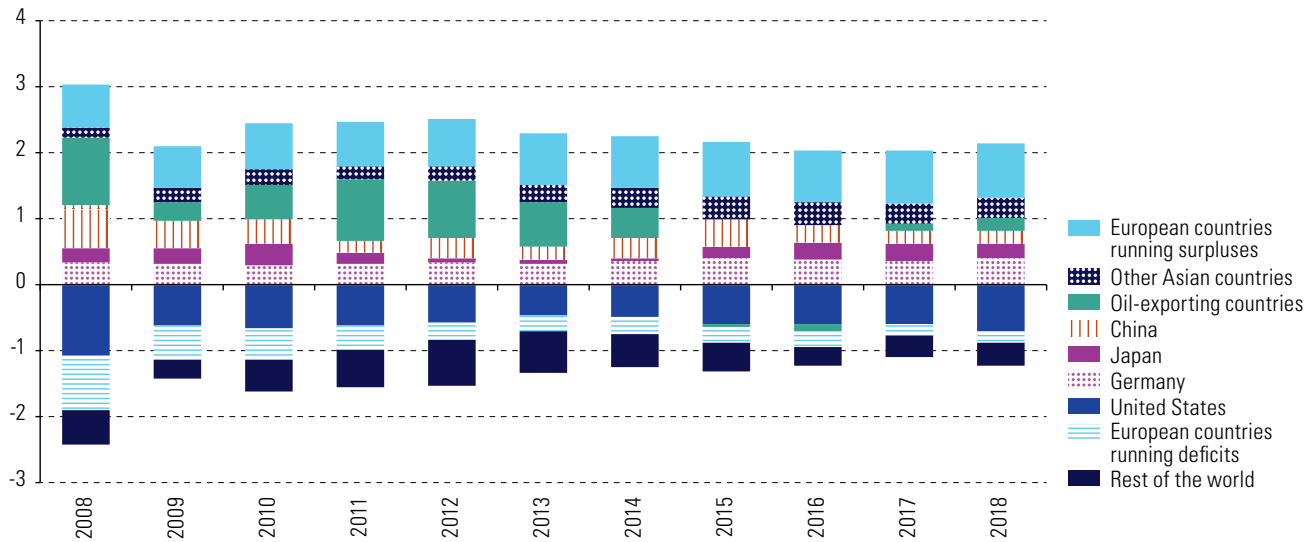
Quantitative easing after the crisis also contributed to inequality, by stimulating a boom in the value of financial assets that disproportionately benefited higher-income households. Meanwhile, the low interest rates resulting from that policy have driven massive borrowing worldwide in the last decade. Emerging economies account for 60% of the increase in non-financial debt after the crisis and China alone for almost 40%.

The performance of world trade has tracked GDP. The volume of global trade in goods grew by 4.7% in 2017, double the average annual growth rate between 2012 and 2016. In 2018, however, there has been a slowdown, and growth projections for 2019 have been revised downward. This is due in part to lower growth in some advanced economies and the weakening of demand in some developing countries where external constraints have re-emerged. In these countries, sharp currency depreciation amid capital outflows has depressed demand. Higher benchmark rates in the United States and greater international uncertainty have prompted investors to withdraw some of their capital from developing countries, particularly those with high external debt, a high current account deficit or low international reserves.

Thanks to the commodity price boom between 2003 and 2012, countries specializing in commodity exports —including several in Latin America and the Caribbean— gained some temporary respite from their external constraints. Once the supercycle of high prices had ended, several of those countries managed to sustain their growth thanks in part to cheap external financing. However, the change in the monetary policy cycle of the United States in 2018 has made access to such financing more expensive, forcing countries to import less and dampening their demand and growth. To reduce their external vulnerability, commodity-exporting countries need to change their production and export structures to improve their net export performance in volume terms. Only thus can they reduce their vulnerability to fluctuations in commodity prices and international borrowing costs.

Another factor that is hampering world trade is the growing trade tensions, related to the persistent disequilibria between the current account balances of the main economies. The United States is the largest deficit country, while China, Germany and the Republic of Korea are major surplus countries (see figure 1). Much of the global imbalances occur in trade between the United States and the aforementioned countries, as well as Japan and Mexico.

Figure 1
Global current account: country and regional composition, 2008-2018[a]
(Percentages of global GDP)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of information from the International Monetary Fund (IMF), *World Economic Outlook: Cyclical Upswing, Structural Change*, Washington, D.C., April 2018.
[a] Figures for 2018 are projections.

The entry into office of the current Administration brought about a marked shift in the traditional position of the United States on globalization. Trade policy plays a central role in efforts to reduce trade deficits and reverse the offshoring of industrial firms. In 2018, in addition to raising several tariffs, the United States finalized the renegotiation of its free trade agreement with the Republic of Korea —with more favourable terms for the United States— and replaced the North American Free Trade Agreement (NAFTA) with a new agreement with Canada and Mexico. While maintaining the overall structure and trilateral nature of NAFTA, this new agreement includes stricter rules of origin for several sectors (automobiles, textiles and chemicals, among others), in an effort to ensure greater participation by the United States in North American value chains, at the expense of extraregional suppliers from Europe and Asia, and even of its partners in the Agreement, particularly Mexico. It also includes strict rules on intellectual property, in line with the traditional position of the United States on this matter.

The main target of the trade restrictions adopted by the United States in 2018 has been China, which has closed or greatly narrowed its gaps with the United States in a number of economic and technological variables. Against this backdrop, the United States' goods trade deficit with China has increased from US$ 84 billion in 2000 to US$ 396 billion in 2017. On average, since 2010, the value of United States imports from China has quadrupled its exports in the other direction. The largest deficits are recorded in electronics and other manufacturing sectors. With the exception of transport equipment, the United States runs surpluses with China only in sectors linked to natural resources.

According to the United States government, the country's technological supremacy is threatened by China's unfair practices, which include the requirement that foreign companies wishing to invest in strategic sectors must form joint ventures with local partners, mechanisms for forcing the transfer of technology and intellectual property, and commercial cyberespionage. The European Union and Japan share a number of the concerns expressed by the United States; accordingly, these three countries are calling for the rules of the World Trade Organization (WTO) to be updated on issues such as industrial subsidies, the regulation of State enterprises and forced technology transfer practices.

In short, the backdrop to the trade tensions between the United States and China is the competition for global economic and technological supremacy, as well as the discussion surrounding the coexistence of different styles of development. These tensions are likely to lead to a redefinition of the rules of trade and foreign investment in the coming decades, a process that will largely determine the space available to developing countries, including those in the region, to design and pursue trade, industrial and technology policies.

2. Regional overview

ECLAC is projecting a 9.7% rise in the value of regional merchandise exports in 2018, reflecting an increase of 7.6% in prices and 2.1% in volume (see table 1). This is the second consecutive year of gains in export values, after the sharp fall between 2012 and 2016. By volume, however, the region's exports are projected to grow by less than half the rate of increase in exports by developing economies overall, which is 4.6% by WTO projections. Imports at the regional level also picked up in 2018 for the second year running, with a projected expansion of 9.5% in value terms. Unlike exports, imports have gained more by volume than by price (4.9% compared with 4.6%).

Table 1
Latin America and the Caribbean (subregions and Mexico): projected variations in exports of goods, 2018
(Percentages)

Region, subregion or country	Exports			Imports		
	Volume	Price	Value	Volume	Price	Value
South America	-0.8	11.0	10.2	5.9	5.2	11.0
Central America	4.4	-0.8	3.6	0.5	5.2	5.7
The Caribbean	4.7	7.3	12.1	2.1	7.0	9.1
Mexico	4.6	4.9	9.5	4.8	3.7	8.5
Latin America and the Caribbean	**2.1**	**7.6**	**9.7**	**4.9**	**4.6**	**9.5**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official data from the countries' central banks, customs offices and national institutes of statistics.

In South America, the projected expansion of exports is attributable entirely to price rises, especially for oil and metals and minerals. In fact, export volumes may drop slightly, owing to a contraction in exports of oil from the Bolivarian Republic of Venezuela, Colombia and Ecuador —mainly because of production capacity constraints— and of soybean and other agricultural products from Argentina and Uruguay, owing to drought. In the Caribbean, too, higher prices account for much of the projected gain in export values, mainly owing to oil and gas exports from Trinidad and Tobago. In the case of Mexico, volume and price increases will contribute in similar measure to the expansion in exports. Lastly, in Central America, the projected expansion in export values is based entirely on higher volumes, since the prices of the subregion's export basket will fall slightly (-0.8%), owing to drops seen in products such as sugar and coffee. Manufacturing exports from Mexico and Central America will benefit from strong demand in the United States.

On the import side, projections show a very small rise in volume in Central America, owing mainly to the steep drop in the volume of imports into Nicaragua and their slack performance in Costa Rica. The terms of trade will also deteriorate by around 5% in 2018, both in Central America and in the Caribbean (except Trinidad and Tobago), reflecting the higher oil bill.

Turning to the Latin American and Caribbean region's main trading partners, the stronger export growth in 2018 reflects trade with China, which consist almost entirely of raw materials and natural-resource-based manufactures (see table 2) This development further entrenches the primary export specialization of the region, especially of South America. By contrast, exports within the region and to the United States, which have a higher manufacturing content, will grow at much lower rates. On the import side, those from China are also the fastest-growing. Chinese imports consist almost entirely of manufactures that compete with regional products in several industries. China is now the second largest origin of imports into the region, after the United States.

Table 2
Latin America and the Caribbean: projected variation in foreign trade and structure of trade in goods, by main trading partner and technology intensity, 2017, and projections for 2018
(Percentages)

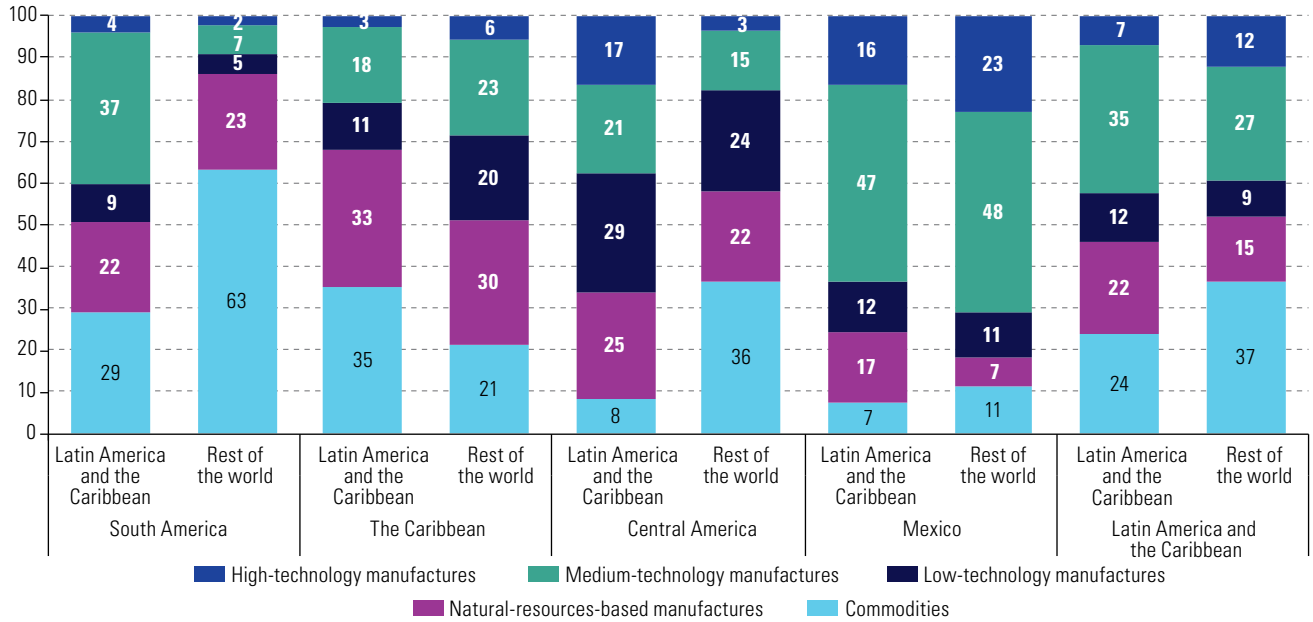
	Partner	Projected variation, 2018	Share in total goods trade, 2017	Share of primary products and natural-resource-based manufactures, 2017	Share of high-, medium- and low-technology manufactures, 2017
Exports	China	28.0	10.3	93.5	6.5
	Latin America and the Caribbean	12.0	16.9	45.8	54.2
	United States	7.1	44.2	27.3	72.7
	European Union	8.7	10.4	69.7	30.3
Imports	China	13.0	17.6	8.9	91.1
	Latin America and the Caribbean	8.5	15.5	46.7	53.3
	United States	8.7	32.6	41.0	59.0
	European Union	3.6	13.8	21.8	78.2

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official figures from the countries' central banks, customs offices and national institutes of statistics, and United Nations Commodity Trade Statistics Database (COMTRADE).

Intraregional exports are projected to rise by 12% in 2018, led by natural-resource-based manufactures (oil, copper, paper and paperboard products) and low- and medium-technology manufactures (especially products of the automobile and iron and steel industries). The intraregional trade index —measured by exports— will rise slightly above its 2017 level to stand at around 17.2%. Notably, 54% of intraregional exports (by value) are high-, medium- and low-technology manufactures (see figure 2), a figure exceeded only by exports to the United States.

In short, the export performance of the region in 2018 shows clear continuity with its historical patterns. The higher export value is mainly a result of prices gains for commodities, added —in the cases of Mexico and Central America— to stronger demand in the United States. The heavy weight of raw materials in the region's export basket leaves the region vulnerable to fluctuations in the prices of these products and, thus, to external restraints, especially at times like the present, when international financing is expensive. The region's export specialization, based on static comparative advantages (abundance of raw materials and low wages), has led to poor export growth during this century. In effect, the volume of regional exports has doubled since 2000, compared to the group of developing Asian economies, whose export volume has multiplied by a factor of 3.5.

Figure 2
Latin America and the Caribbean, subregions and Mexico: structure of goods exports to Latin America and the Caribbean and to the rest of the world by technology intensity, 2017
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).

Regional integration is essential to break the inertia, diversify exports and develop a more knowledge-intensive export basket. This is because of the high industrial content of intraregional trade, as well as its crucial role for export SMEs. The need to step up efforts to move towards an integrated regional market is all the more urgent in the context of slowing growth, net capital outflows and the mounting protectionism facing the region, which will likely worsen in 2019.

3. Possible impacts of trade tensions for the region and the world

The United States has raised a number of import tariffs in 2018, which has generated reprisals by the trading partners affected. Computable general equilibrium (CGE) models were used to estimate the possible effects on output and trade of five scenarios reflecting a progressive worsening of current trade tensions. The scenario as its stands today includes the application by the United States of tariff surcharges on iron and aluminium, as well as on Chinese products worth a total of US$ 250 billion, and China's response with surcharges on United States products worth US$ 110 billion.

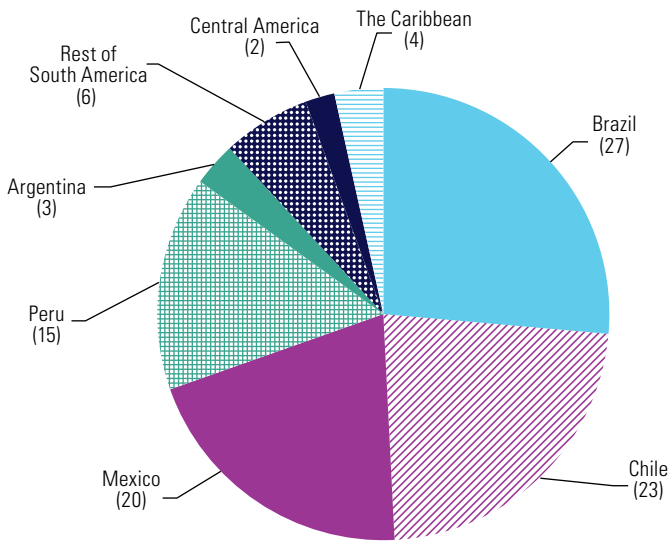
The effects on output of the existing scenario show a larger loss for China (-1.2% compared with -0.2% for the United States). This is because goods exports to the United States represented 3.6% of China's GDP in 2017, whereas goods exports to China represented just 0.7% of United States output that year. The simulation showed the current scenario having no impact at all on global output, because the other countries benefit from the divergence of trade generated by comparatively lower tariffs in the United States (with respect to China) and vice versa. The impact on Latin America and the Caribbean is positive by 0.7% and in the case of Mexico —which has great potential

to replace Chinese manufactures in the United States market— by 1.2%. Be that as it may, beyond the potential short-term gains, an escalation of protectionist measures between China and the United States would entail serious risks to the global economy, which would not leave the region unscathed.

B. The region in the global minerals and metals trade

The Latin America and Caribbean region is among the world's most richly endowed with minerals and metals and is a net exporter of these products. The region's share of global exports in this sector (8%) exceeds its share of global exports of all goods (5.6%). However, this large global share is accounted for by just a few countries: 85% of the region's metal and mineral exports come from Brazil, Chile, Mexico and Peru (see figure 3). Only two countries in the region, Brazil (ranked seventeenth) and Chile (ranked nineteenth), are among the top 20 world exporters of minerals and metals. Those countries run large trade surpluses in the sector (as does Peru). In contrast, Mexico is among the main global importers of these goods (ranked sixteenth) and has the largest trade deficit among the countries of the region.

Figure 3
Latin America and the Caribbean: structure of exports of minerals and metals by country, averages for 2015-2017
(Percentages)

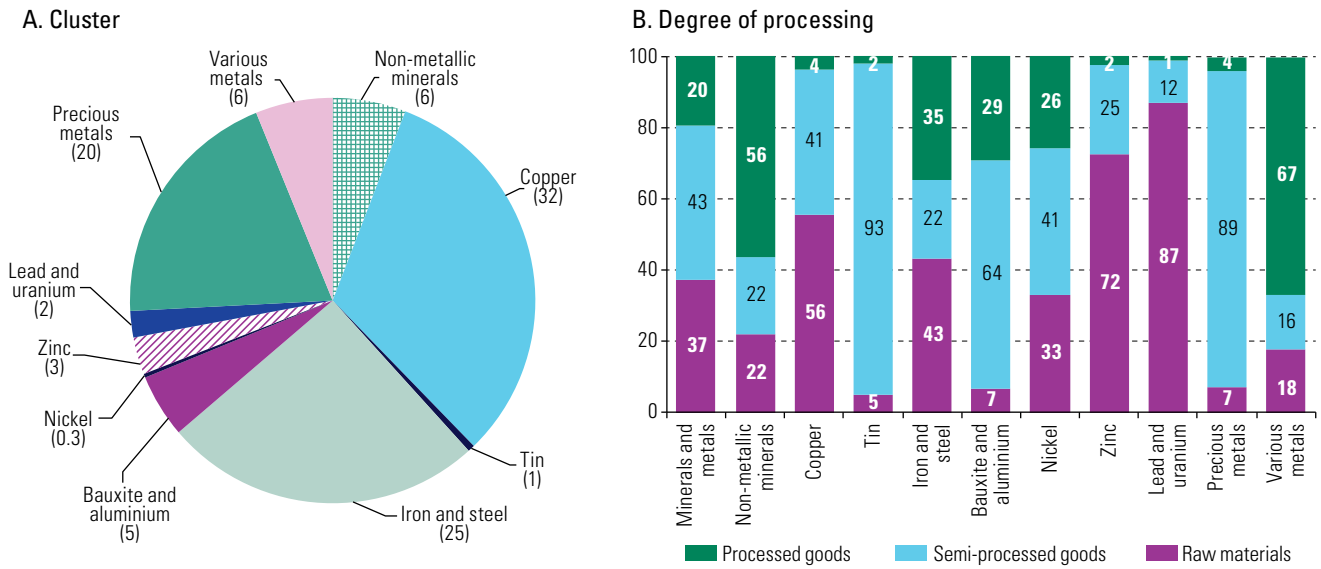


Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).

Mineral and metal exports from Latin America and the Caribbean —which make up just under 20% of the region's total goods exports— are characterized by a low degree of processing. This translates into the highest proportion of commodities of any world region (37% in the period 2015–2017, compared with 9% of the sector's total global exports). In fact, the share of raw materials in the region's mineral and metal exports has almost doubled over the past 20 years. The other side of this coin is a decline in the share of finished products and, to a lesser extent, in semi-finished ones. This is largely connected to the increasing orientation of the region's exports towards China and the rest of Asia, where demand is concentrated in raw materials such as iron and copper ores. At the same time, China has become the world's leading producer of steel, aluminium, cast copper and other products, competing strongly with the region's countries in finished and semi-finished goods.

Nearly 80% of mineral and metal exports from Latin America and the Caribbean are concentrated in the copper, iron and steel, and precious metals clusters, followed by the various metals cluster (products made from a combination of iron, steel, copper and their alloys, and other metals such as lithium) (see figure 4A). In the past decade, the share of raw materials has increased in the exports of all clusters, except for tin and various metals. Among the four main clusters, which are discussed in detail in chapter II, the weight of raw materials is greater in copper and iron and steel, while exports of precious metals and various metals are concentrated in semi-processed and processed products, respectively (see figure 4B).

Figure 4
Latin America and the Caribbean: structure of exports of minerals and metals by cluster and degree of processing, averages for 2015–2017
(Percentages)

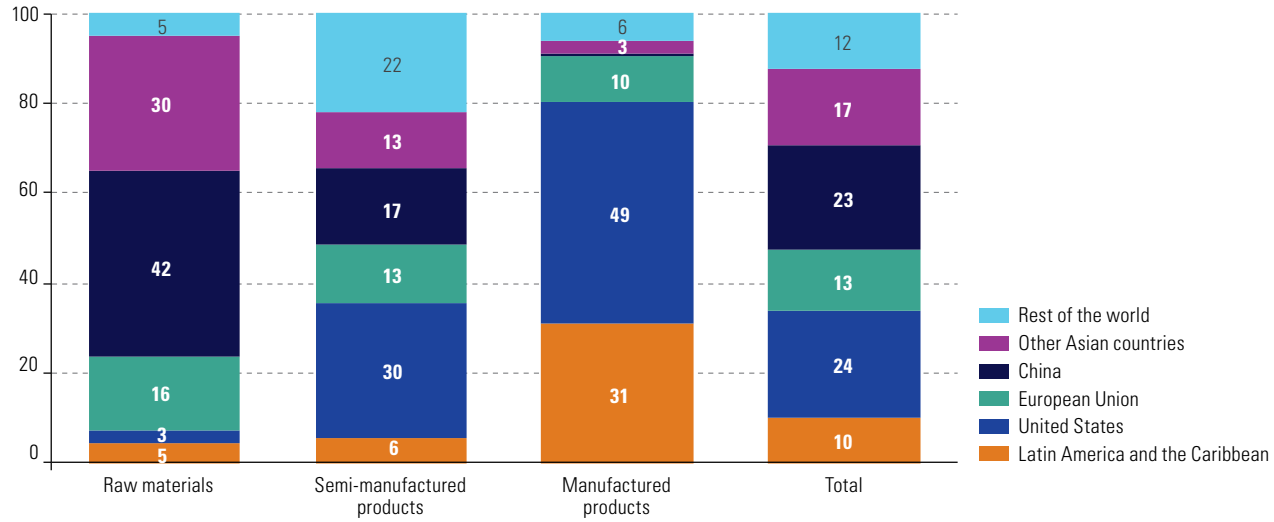


Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).

The United States and China, followed by other Asian countries, are the main destinations for the region's mineral and metal exports, but there are differences by degree of processing (see figure 5). While the relative importance of Asia declines as the degree of processing of the products exported rises, the opposite is true of exports to the United States and within the region itself. Thus, the bulk of raw material exports go to Asian countries, while the United States is the main single destination for semi-finished goods exported by the region. This pattern is heightened in the case of finished products: the United States absorbs almost half, followed by the region itself, with almost a third of the total, while the share of China and the rest of Asia is marginal.

The increasing specialization of the region as a supplier of raw minerals and metals is reflected in its involvement in global value chains and in its minerals physical trade balance (calculated by subtracting exports from imports, measured in tons). In the first case, the region is present in the early stages of value chains (especially its links with Asia and the European Union), while losing share in links with higher levels of processing further along these chains. With regard to the minerals physical trade balance, as a net exporter of raw mining products the region runs a deficit in physical terms (that is to say, an outflow of materials to other economies greater than the inflow of materials from other economies, mainly as a result of increasing exports from South America), which places greater pressure on natural resources.

Figure 5
Latin America and the Caribbean: distribution by destinations of mineral and metal exports, by degree of processing, averages for 2015–2017
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).

The region's increased specialization in commodity exports is a cause for concern because of the well-known problems associated with dependency on exports of mining commodities, including the vulnerability of exports, growth and fiscal revenues to price fluctuations, limited value added and poor diversification into new products and services, as well as environmental damage of various kinds.

The indispensable transition to a low-carbon global economy is indissolubly linked to mining, since a number of the technologies needed to mitigate climate change (such as electromobility) are produced using large quantities of minerals and metals. Latin America and the Caribbean has a large portion of the known reserves of a number of metals that are critical to the production of clean technologies, which opens up —until recently unprecedented— prospects for simultaneous progress in sustainability and industrial and export diversification. However, experience indicates that this progress will not occur spontaneously in response to market price signals, but will require active industrial and technology policies.

Growing global demand for metals offers an opportunity for the region to learn from the mistakes of the past and pursue policies to embed more local value added and disseminate knowledge in relation to these resources. At the same time, environmental sustainability can become a powerful factor in differentiating the region's mining exports, for example if it reduces its carbon footprint by gradually replacing fossil fuels with unconventional renewable energies in its production processes. Incipient efforts along these lines in some of the region's countries are encouraging, and ought to be stepped up and applied more widely in the coming years. Measures are also needed to promote regional research and development initiatives on shared resources in order to overcome the limitations imposed by national budgets. An example would be the creation of a programme to develop new applications for lithium, drawing on the vast reserves existing in some countries in the region.

C. Cross-border e-commerce as a new driver of exports

In a context where regional exports have seen little growth in terms of volume and have been concentrated in a small number of products during the last decade, cross-border e-commerce has the potential to boost and diversify exports. The rapid spread of the Internet is drastically reducing international transaction costs, bringing buyers and sellers closer together, and making previously unattainable foreign markets accessible. Companies that buy and sell online tend to export more than those that do not, they sell their products and services to more markets, are more diversified, survive longer and have higher productivity rates and wages. Consumers also benefit from e-commerce, thanks to the time they save on purchases and the fact that they can access a wider range of products and services at lower prices.

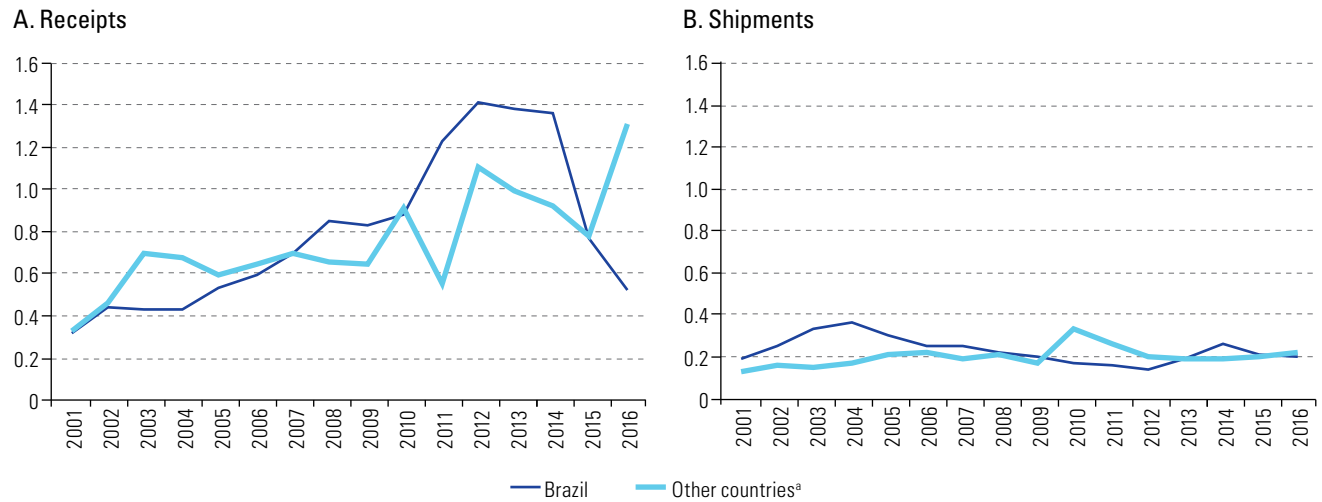
Cross-border e-commerce is defined as electronic transactions that are made between users from different countries, enabled by computer platforms or that deliver the product or service digitally. Different actors are involved in cross-border e-commerce —firms, consumers and governments— which give rise to different types of transaction: from business to business (B2B), from business to consumer (B2C), from business to government (B2G) and from consumer to consumer (C2C). This trade covers a wide range of transactions, from buying a book over a foreign platform (such as Amazon) or purchasing a car journey using a foreign platform such as Uber, to transferring data through social networks.

In 2015, global e-commerce (internal and cross-border) reached US$ 25.3 trillion. Available data show that five countries accounted for more than half of global online sales in 2015 (in decreasing order): the United States, Japan, China, the Republic of Korea and Germany. That year, B2B transactions accounted for 89% of global e-commerce transactions, while the remaining 11% was mostly B2C. The value of global B2C sales is expected to increase more than threefold between 2014 and 2020. Cross-border e-commerce will double its share of global B2C e-commerce, from 15% to nearly 30%, over the same period. The share of Latin America and the Caribbean in cross-border e-commerce worldwide could increase from 2.6% in 2014 to 5.3% in 2020. In the region, almost half of the total B2C online purchases made in 2016 originated in Brazil, followed by Mexico (16%) and Argentina (14%).

The consumption of products imported via online platforms has grown exponentially in the region, but the export of goods using these platforms has not increased to the same extent. This is suggested by the persistent gap between shipments and receipts of international packages (see figure 6). The products most purchased by consumers in the region through electronic means are: clothing, accessories and footwear; digital cameras and audio devices; books, CDs, DVDs and video games; and beauty products.

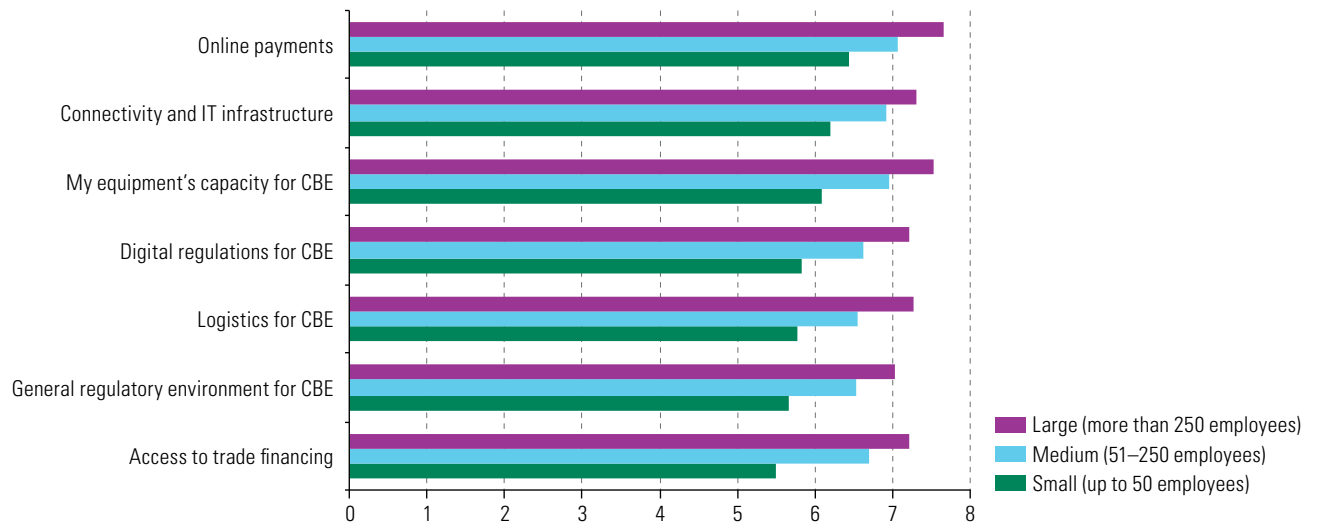
The development of cross-border e-commerce depends on several factors. A survey of 1,362 firms from six Latin American countries indicates that the main challenges for cross-border e-commerce are access to financing, the regulatory environment, cross-border logistics and digital regulations in other markets. The perception of all these factors is more negative among small businesses (see figure 7).

Figure 6
Latin America (11 countries): shipments and receipts of international packages, 2000–2016
(Billions of packages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of data from Universal Postal Union (UPU).
[a] Bolivarian Republic of Venezuela, Chile, Colombia, Costa Rica, Ecuador, Mexico, Panama, Paraguay, Peru and Uruguay.

Figure 7
Latin America (selected countries):[a] perceptions of the quality of the environment for cross-border e-commerce, 2016–2017
(From 1=very bad to 10=excellent)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of 1,430 firms from the Nextrade Group, *Ecommerce Development Survey and Index*, El Segundo, 2017.
[a] Argentina, Brazil, Chile, Colombia, Mexico and Uruguay.

Based on the perception of the companies consulted, there are four major areas that need to be strengthened in order to support the development of cross-border e-commerce. The first is the development of the digital ecosystem, including broadband connectivity, the availability of information and communication technologies (ICTs), technical skills and the quality of international logistics. The countries of Latin America and the Caribbean face significant challenges in several of these areas. In this context, the actions envisaged in the Digital Agenda for Latin America and the Caribbean (eLAC2020) to develop a digital common market would contribute significantly to the promotion of e-commerce in the region.

Second, there needs to be greater regulation of cross-border e-commerce. Given that there is still no multilateral framework, almost half of WTO member States have developed their regulations through regional or bilateral agreements. In Latin America and the Caribbean, countries have addressed this issue through the various integration mechanisms. The most recent step forward in the area of plurilateral regulation is the e-commerce chapter in the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), which was signed in 2018 by 11 countries, including Chile, Mexico and Peru. It contains the largest number of obligations and innovations on e-commerce of any international trade treaty. Several of the 29 preferential trade agreements signed by countries of the region since 1995 include provisions similar or equivalent to those of the respective CPTPP chapter. Another recent agreement with an extensive chapter on e-commerce is the treaty between Mexico, the United States and Canada, containing provisions that are also similar to CPTPP.

Third, efficient logistics and customs procedures are essential to facilitate cross-border e-commerce in goods. In the vast majority of customs services in Latin America and the Caribbean, time frames are longer and costs higher than in developed countries for importing and exporting goods. In addition, customs procedures need to be further modernized and digitized through paperless trade and the creation of a trustworthy online vendor programme (similar to the authorized economic operator of the WTO Agreement on Trade Facilitation). Another important measure is modernizing risk detection by customs services through predictive analysis and machine learning, with a view to identifying illegal shipments and fraudulent transactions designed to avoid tariffs.

Another challenge related to logistics concerns the countries' postal services. With the exception of Brazil, no postal service in the region scores higher than the world average. These inefficiencies cause delays, even in domestic e-commerce. Postal operators in several countries have set up programmes to reduce the logistics costs associated with inbound e-commerce, especially from China and the United States. The *Exporta Fácil* programme, launched in Brazil in 2000, is an initiative focused directly on reducing shipping costs and difficulties in customs procedures of cross-border e-commerce.

A fourth area that needs to be strengthened to facilitate the development of cross-border e-commerce is payment systems. Thanks to the proliferation of credit and debit cards, online payments have become simpler in the region, but difficulties remain owing to the relative lack of financialization of the population in several countries and the high commissions applied to cross-border transactions made using bank cards.

To address these challenges, some governments in the region have adopted measures to encourage firms to enter cross-border e-commerce and reduce user mistrust. Their export promotion agencies have carried out general training and trade facilitation programmes, developed logistics platforms and services, financed website design and marketing and introduced new cross-border payment methods. In addition, to foster trust in cross-border e-commerce, several national associations and chambers of e-commerce have promoted self-regulation through codes of conduct and trust seals.

CHAPTER

I

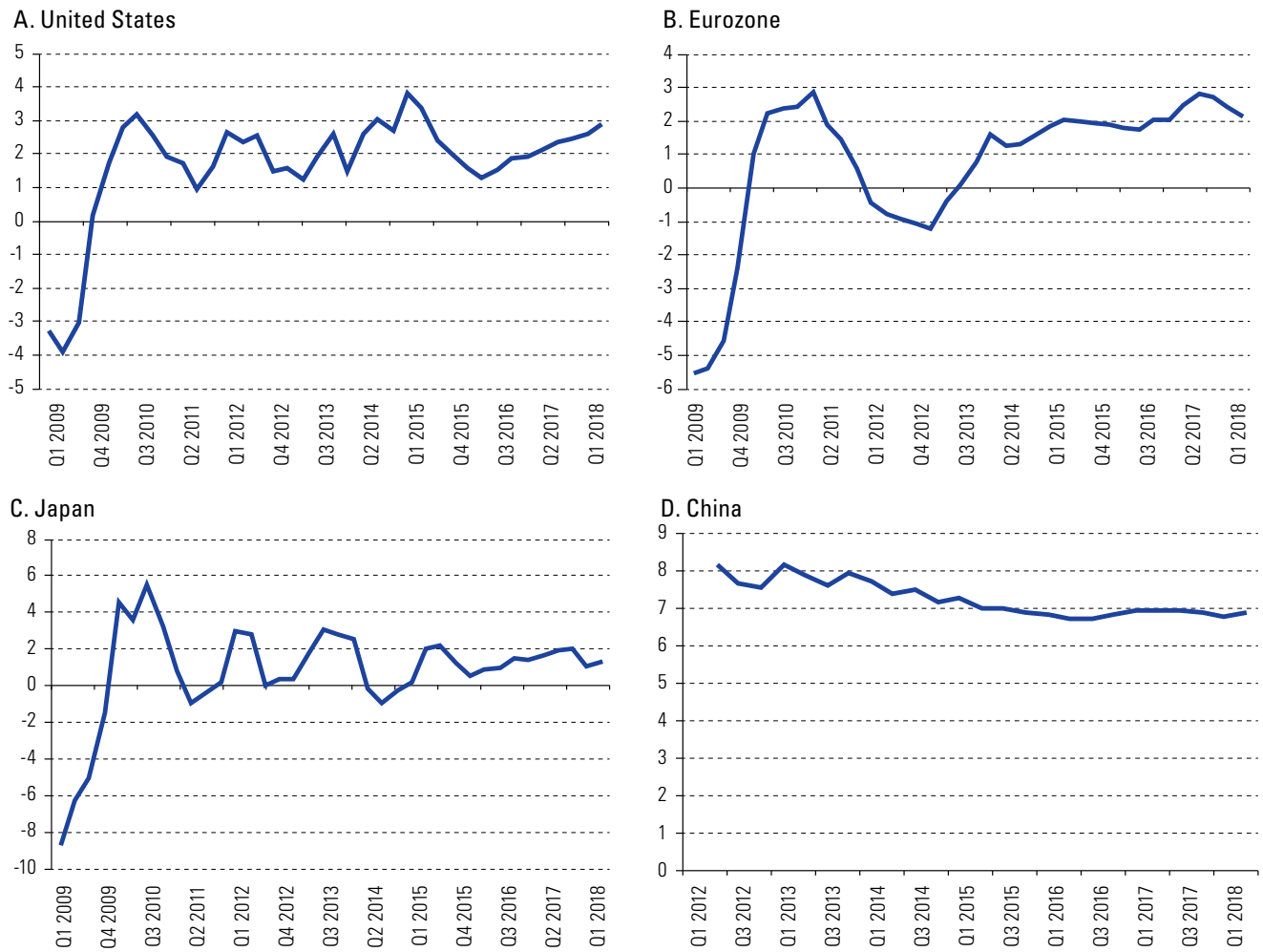
Trade tensions are worsening the international situation

A. Weak growth and global strains: the legacy of the world economic crisis

1. The outlook for 2018: moderate and divergent growth

In 2017 and the first quarter of 2018, there was synchronized growth in the major developed economies for the first time since the financial crisis, and this created a feeling of optimism about the recovery of the global economy after half a decade of poor growth. Global output grew by 3.7% in 2017, as against 3.2% the year before, with better performances in all major developed and emerging economies (United Nations, 2018a) (see figure I.1). This confidence is currently being reflected in the gradual reversal of the policy of quantitative easing adopted by the United States Federal Reserve to confront the 2008–2009 crisis. Likewise, in June 2018 the European Central Bank announced the adoption of a similar measure from next year (ECLAC, 2018a).

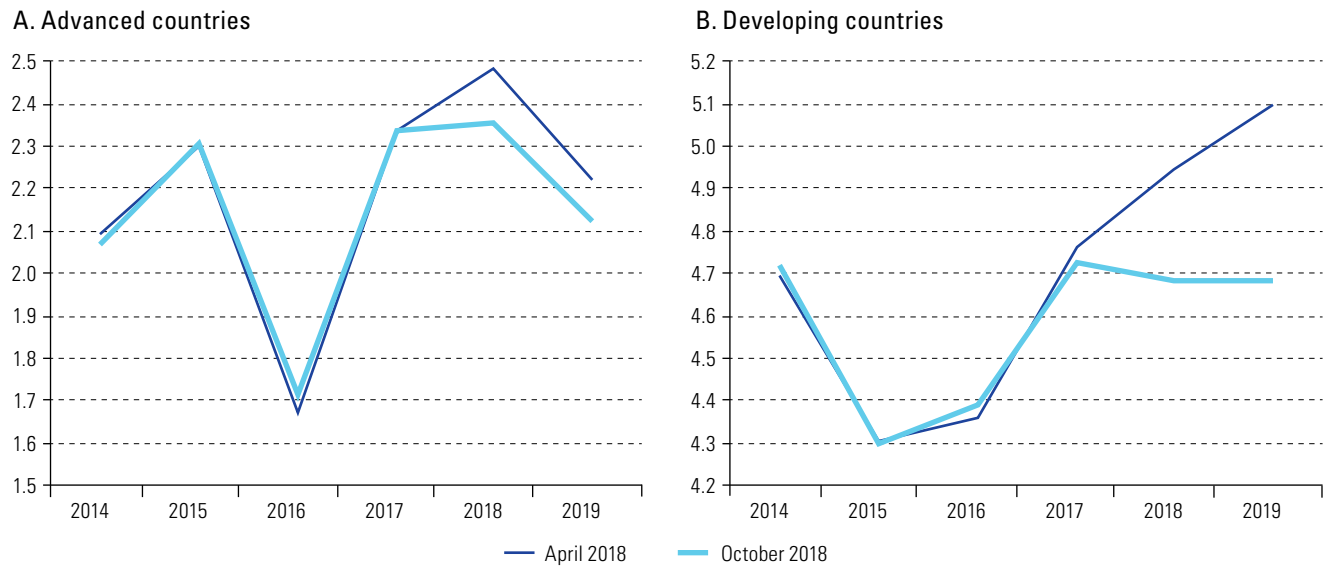
Figure I.1
China, Japan, United States and eurozone: year-on-year changes in GDP, first quarter of 2009–second quarter of 2018
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Organization for Economic Cooperation and Development (OECD), *Quarterly National Accounts,* vol. 2018, No. 1, Paris, June 2018 and data from the National Bureau of Statistics of China.

Optimism has moderated in the second half of 2018, however. While the United States has carried on growing solidly, the eurozone and Japan are slowing down. At the same time, growth rates in developing countries are much more heterogeneous than in 2017. China and India have maintained high rates of expansion, while growth in Argentina, Brazil, South Africa and Turkey has plummeted. In this context, growth projections for advanced and developing countries were revised downward between April and October this year (see figure I.2).

Figure I.2
Advanced and developing countries: changes in GDP, 2014–2019[a]
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of International Monetary Fund (IMF), *World Economic Outlook: Challenges to Steady Growth*, Washington, D.C., October 2018.
[a] Figures for 2018 and 2019 are projections.

The United States has continued to be the most dynamic advanced economy. Its GDP grew at an annualized rate of 4.1% during the second quarter of 2018, and growth of almost 3% is anticipated for the full year, as compared to 2.3% in 2017 (CBO, 2018). Consumption, which represents almost three quarters of GDP, grew thanks to lower unemployment, rising financial asset values and greater consumer confidence. Investment was the most dynamic component of GDP in 2017 and the early part of 2018 as a result of consumption growth and an expanding oil and gas sector, boosted in part by higher prices for these products.

The good performance of the United States economy has been partly a consequence of the macroeconomic policies adopted to cope with the financial crisis. Together with an expansionary fiscal policy in the years immediately following the crisis, quantitative easing has been the main instrument employed. Four rounds of asset purchases from 2009 to 2017 brought down interest rates and thus spurred consumption, investment and employment. These policies have helped to make the current cycle of expansion the second longest in post-war history, albeit average annual growth has been low (2.2%) by historical standards.[1]

[1] According to data from the Bureau of Economic Analysis (BEA), Gross Domestic Product [online] https://www.bea.gov/data/gdp/gross-domestic-product.

The current Administration has implemented new policies to stimulate the economy. The main one was the tax reform of December 2017, the most substantial since 1986. This reform reduced the corporation tax rate from 35% to 21%, which is below the average for the member countries of the Organization for Economic Cooperation and Development (OECD). The switch to a semi-territorial tax system and associated measures are a disincentive for multinationals to funnel their earnings to low-tax countries or jurisdictions. The reform also allows firms to pay a one-off tax of 15.5% on cash or profits repatriated from abroad. Apart from this, the Administration has approved higher spending for 2018 and 2019, which together with the tax cuts represents a fiscal stimulus equivalent to 1% of GDP (OECD, 2018c).

Introducing an expansionary fiscal policy when the United States economy is already growing at close to potential could affect macroeconomic stability by increasing the fiscal deficit and public debt over the coming years. It would be the first time in decades that the United States had adopted a procyclical fiscal policy in peacetime (see figure I.3). Although this stimulus can initially be expected to boost the economy of both the United States and its trading partners, it could increase the risks to the world economy over a longer time horizon.

Figure I.3
United States: unemployment and federal government deficit, 1960–2020[a]
(Percentages)

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Federal Reserve Bank of St. Louis, Federal Reserve Economic Data (FRED).
[a] Data from 2018 to 2020 are projections by IMF (2018b).

The main risk from an expansionary fiscal policy in the United States under current conditions is of a rise in inflationary expectations. This could lead the Federal Reserve to raise its monetary interest rate more quickly, accelerating the capital outflows from emerging markets that are already under way. In addition, the resulting dollar appreciation would worsen the United States trade deficit and increase the surpluses of countries such as China, Germany and Japan, which would heighten trade tensions (IMF, 2018a).

The current Administration is trying to reduce the trade deficit, lower the tax burden and increase the public and private investment rates. In theory, though, these three goals could be hard to achieve simultaneously in the short run. In the absence of

greater private sector saving, the higher fiscal deficit and investment rate will have to be financed by external saving, i.e., through an increase in the trade deficit. This was what happened in the United States in the 1980s, when a rising fiscal deficit (due to tax cuts by the Reagan Administration) led to an increase in the current account deficit, popularizing the concept of "twin deficits" (*The Economist,* 2017). Indeed, despite the various trade restrictions introduced this year, the United States goods and services trade deficit was 7% higher from January to July 2018 than in the same period of 2017 (United States Bureau of the Census, 2018).

The eurozone had its best performance for a decade in 2017, with growth of 2.6% (United Nations, 2018a). Private consumption picked up in the context of the lowest unemployment rate in nine years and rising labour force participation (OECD, 2018a). Investment also grew more strongly because of the economic recovery and the low cost of credit. The eurozone grew by less than expected in the first half of 2018, however (2.5% and 2.2% in the first and second quarters, respectively). Growth is anticipated to be about 2% for 2018 and 2019, supported by an accommodative monetary policy. Consumption will continue to be dynamic because of lower unemployment and recovering wages. There is growing uncertainty, however, about the conditions for the withdrawal of the United Kingdom from the European Union (Brexit), which will take place in March 2019 (United Nations, 2018a).

The eurozone has recovered from the crisis much more slowly than the United States in terms of growth, employment, investment and inflation. The main reason is that quantitative easing was introduced later and on a more modest scale in the eurozone than in the United States, which slowed the process of deleveraging and bank balance sheet adjustment. Other factors that have been mentioned are: weaker aggregate demand because of a more austere fiscal policy, a more heavily regulated labour market and slower introduction of new technology in firms (Kollman and others, 2015).

The Japanese economy expanded at its fastest rate for five years in 2017 (1.7%), supported by an active fiscal policy. Quantitative easing also stimulated private investment, which was complemented by favourable external demand, high corporate profits and a labour shortage (Bank of Japan, 2018). Growth in 2018 and 2019 is expected to be just over 1%. Japan is the only advanced country not to have announced an end to its asset purchases to support economic activity and inflation. The main challenges for the Japanese economy are control of the public debt (which reached a new high of 224% of GDP in 2017), trade tensions, especially in the automotive sector (OECD, 2018d), and the shrinking of the workforce because of population ageing.

Growth in the Chinese economy has continued to edge down. Annual GDP growth is expected to have fallen from 6.9% to 6.7% between 2016 and 2018, although this would still make it the highest in the world after India's. This slowdown partly reflects a shift in the drivers of growth from investment to consumption. The great size of China's economy means that it accounts for a third of global GDP growth, exceeding the combined contribution of the developed countries.

In 2017, the Chinese Government began a campaign to control the expansion of debt, and this has been a factor in lower investment growth (6% in the first half of 2018, according to the National Bureau of Statistics of China). The authorities are particularly concerned to control local government debt, and this is directly impacting

infrastructure investment. Conversely, consumption has been highly dynamic thanks to rising real wages, low unemployment, a cut in the sales tax on a number of products and a rise in the payroll tax threshold. Trade tensions with the United States have chiefly affected financial variables, without any great impact as yet on the real economy. Growth is expected to be about 6.3% in 2019 (United Nations, 2018a). The Government will carry on trying to reduce debt, paying particular attention to the so-called shadow banking. It will also be alert to the possible negative effects of trade tensions and will adopt stimulus measures if necessary to meet the growth target set.

To sum up, growth in the Group of 20 (G20) countries, taken together, is expected to be slower in 2018 and 2019 than was projected at the beginning of this year. In addition, the growth paths of the leading economies are diverging. There is increasing uncertainty about the impact on financial markets of monetary policy normalization in the advanced economies and increased trade tensions. Some developing countries with weak fundamentals in the form of high debt or current account deficits are being affected by this financial volatility, with currencies and growth weakening severely. A decade on from the start of the crisis, the world has yet to be restored to the growth path it was on formerly.

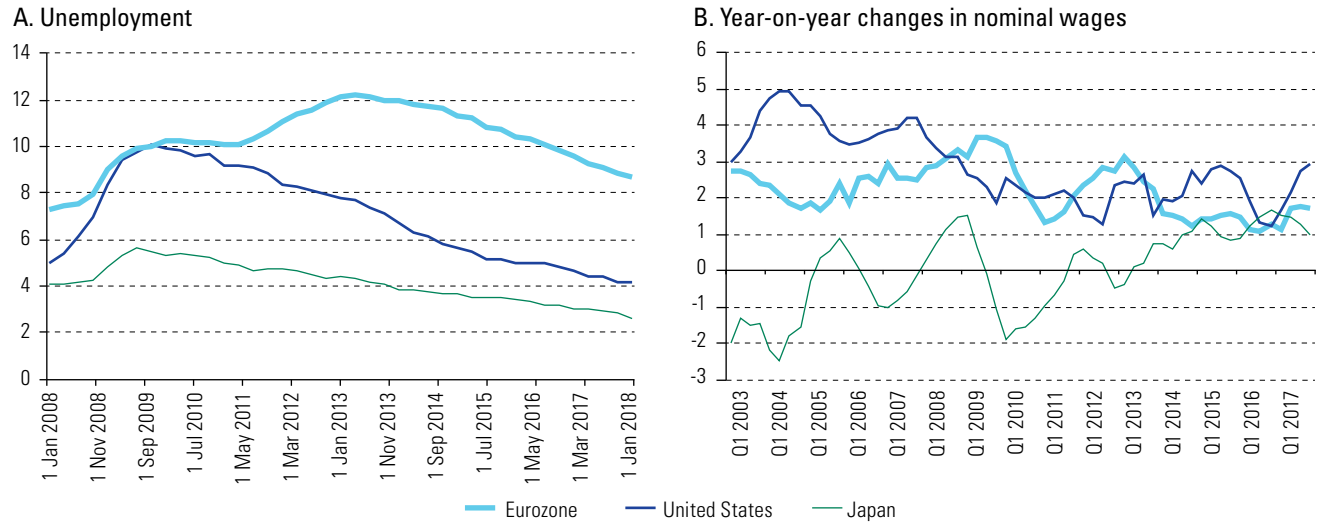
2. The uncertain impact of macroeconomic policy and persistent inequality

The crisis led to output falling in 2009 in 91 countries that accounted for two thirds of global GDP (IMF, 2018d). The decade since the crisis has been marked by weak growth, with structurally lower rates than in the foregoing period, especially in the eurozone, where the rate fell from an average of 1.8% between 2000 and 2008 to 1.2% between 2010 and 2017. Thus, per capita income recovered to its pre-crisis level only in 2016 in the eurozone, 2013 in Japan and 2011 in the United States.

The main instrument the advanced countries used to restore growth and employment after the crisis was quantitative easing, as they had limited scope to increase fiscal spending and cut reference rates. The goal of this monetary policy was to bring down interest rates and thereby promote consumption and investment. The expected employment growth would then put upward pressure on wages and thence inflationary expectations. These linkages underlay traditional monetary policy prior to the crisis.

Low growth in the advanced countries in the decade since the crisis, however, reflects the uncertain impact of macroeconomic policy in the period. In fact, the traditional links between the different macroeconomic variables have weakened in the years since the crisis. Although unemployment has returned to pre-crisis levels in the eurozone, Japan and the United States, wages have stagnated (see figure I.4). In the United States, projections are for continuing low inflation and wage growth up to 2020 (Powell, 2018). Conversely, the European Central Bank has stated that lower unemployment in the eurozone in 2018 has been translating into higher wages and underlying inflation. The Bank of Japan has indicated that, while labour shortages have been pushing wages upward, inflation has been held down by a lack of demand, rising productivity and the difficulty of altering deflationary expectations.

Figure I.4
United States, Japan and eurozone: unemployment and nominal wage growth, 2003–2018
(Percentages)



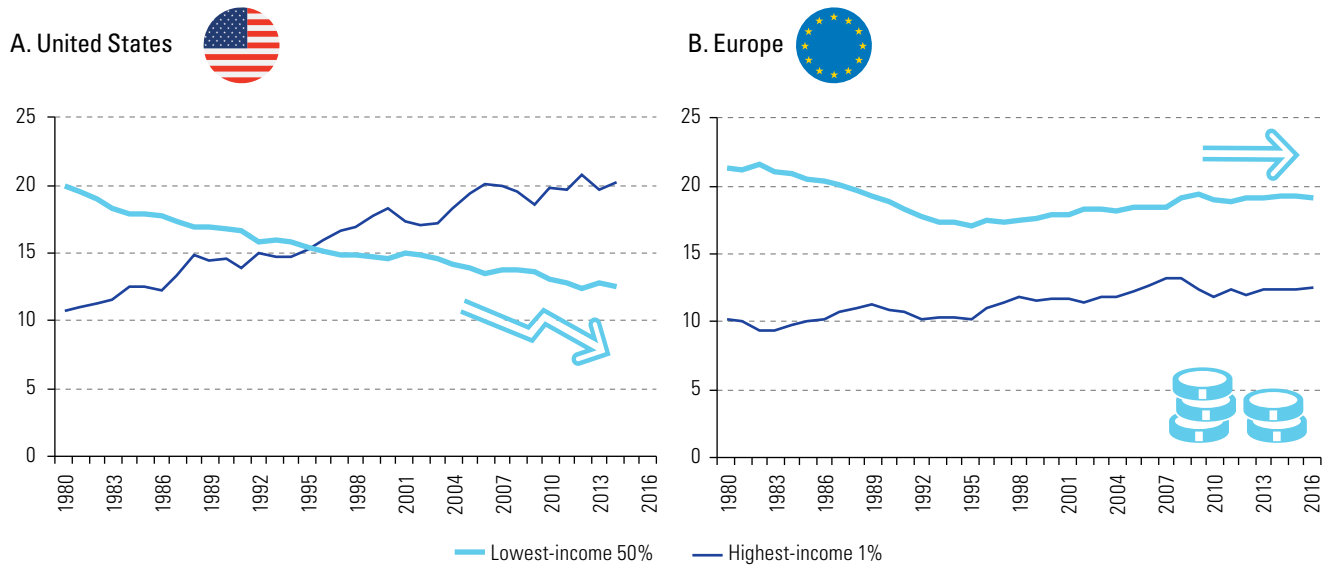
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Organization for Economic Cooperation and Development (OECD), *OECD Employment Outlook 2018*, Paris and the United States Bureau of Labor Statistics.

A number of analysts have argued that multiple factors are holding down wage and price growth on a permanent basis, so that the traditional monetary policy models and instruments need to be adjusted (Powell, 2018). First, there are many people outside the workforce who are willing to work, while those already in it would like to work more hours. Second, digitalization, automation and other technological advances, in combination with the growing competition posed by low-cost imports from China and other Asian countries, led to a situation in which lower-skilled workers in the advanced countries saw their wages stagnate and employment stability deteriorate. Third, a lesser degree of unionization has reduced workers' bargaining power. Fourth, low productivity growth in recent years has limited the scope for raising wages (ECLAC, 2016).

Faced with growing uncertainty in the global economy, and by contrast with what is happening in the United States (where the recovery has been more vigorous), the European Central Bank and the Bank of Japan have left themselves a considerable amount of leeway regarding the policies to be followed in the short and medium run. Before bringing quantitative easing to an end, they want to be sure that growth has stabilized and is no longer dependent on it. Consequently, understanding why the link between interest rate changes, economic growth, employment, wages and inflation is currently so weak is crucial to prevent any change in monetary policy from negatively affecting growth (ECLAC, 2017).

Wage stagnation since the crisis has contributed to income polarization and the relative impoverishment of the middle classes in the advanced countries. This tendency is especially in evidence in the United States, where the lower-income half of households has seen its share of national income decline steadily since the 1980s. In Europe, although the trends are less extreme, the lower-income half of households has seen its share of national income fall slightly since the 1980s, while that of the richest 1% of households has increased (see figure I.5).

Figure I.5
United States and Europe: national income shares of the highest-income 1% and lowest-income 50% of households, 1980–2016
(Percentages)



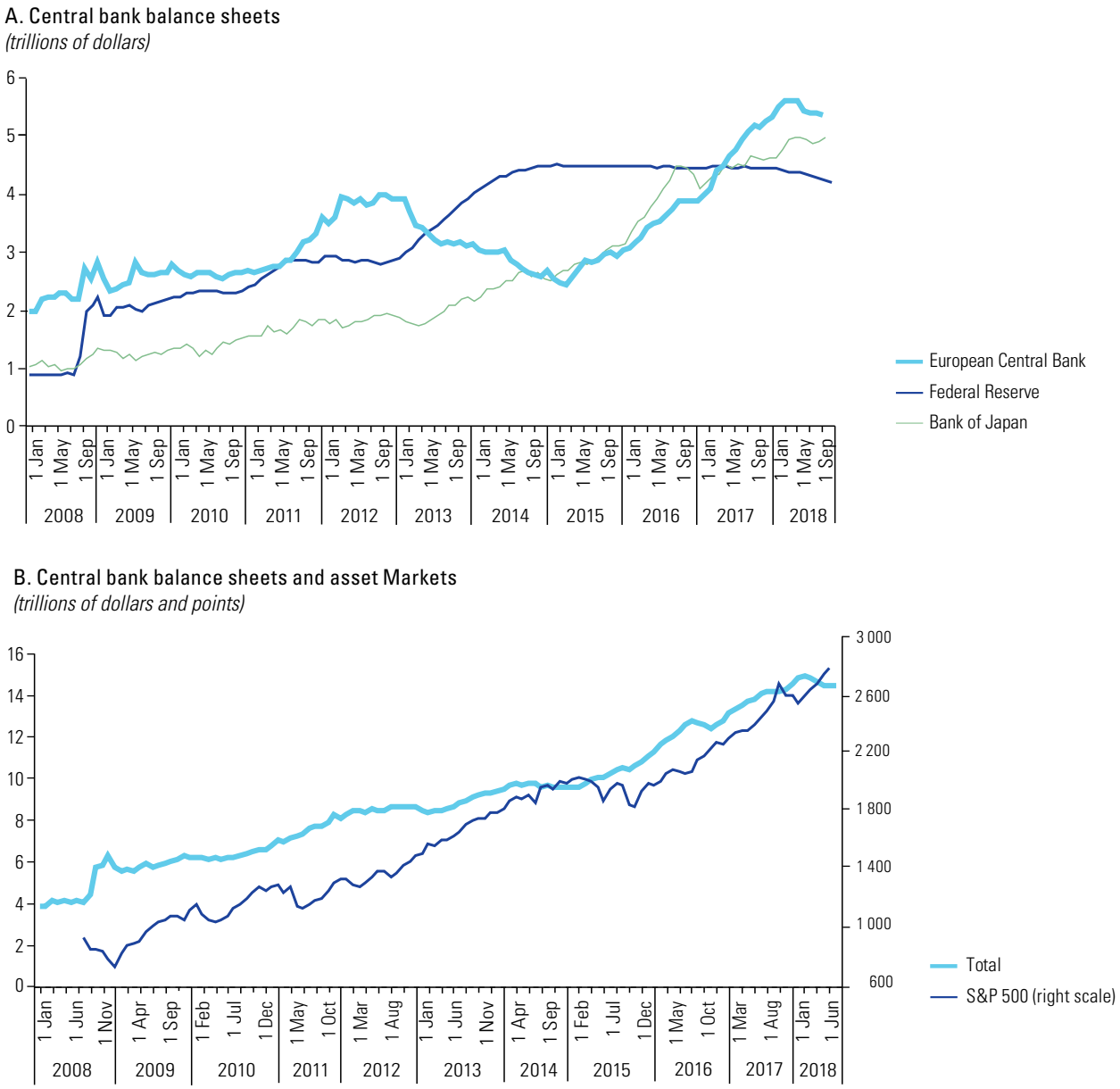
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Inequality Database [online] https://wid.world/data/.

Another factor that heightened inequality in the advanced countries after the crisis was the rising value of financial assets, ownership of which is concentrated in higher-income households (ECLAC, 2018b). Between 2009 and 2014, almost all household income growth in the United States was in the top decile, which owns the bulk of financial assets (CBO, 2018). Similar trends can be seen in the eurozone and Japan.[2]

The great increase in financial asset values has been mainly due to quantitative easing since the crisis. In 2009, the central banks of the United States, the eurozone and Japan began to purchase enormous amounts of different types of financial assets, such as Treasury bonds, mortgage bonds and exchange-traded funds. The assets of the three central banks thus rose from US$ 6 trillion at the start of 2009 to US$ 14 trillion in 2018 (see figure I.6A). These purchases reduced the interest rates on these instruments, diverting demand to other financial assets and driving up their value (Pérez, 2017). This is demonstrated by the evolution of the index representing the value of the 500 largest publicly traded firms in the United States, the Standard & Poor's 500 (S&P500) (see figure I.6B).

[2] This pattern was partly offset by other factors that improved income distribution. First, quantitative easing drove a recovery in economic activity and employment, generating new income for the poorest deciles. Second, this expansion helped increase the value of homes, including those of the middle class (Colciago, Samarina and de Haan, 2018).

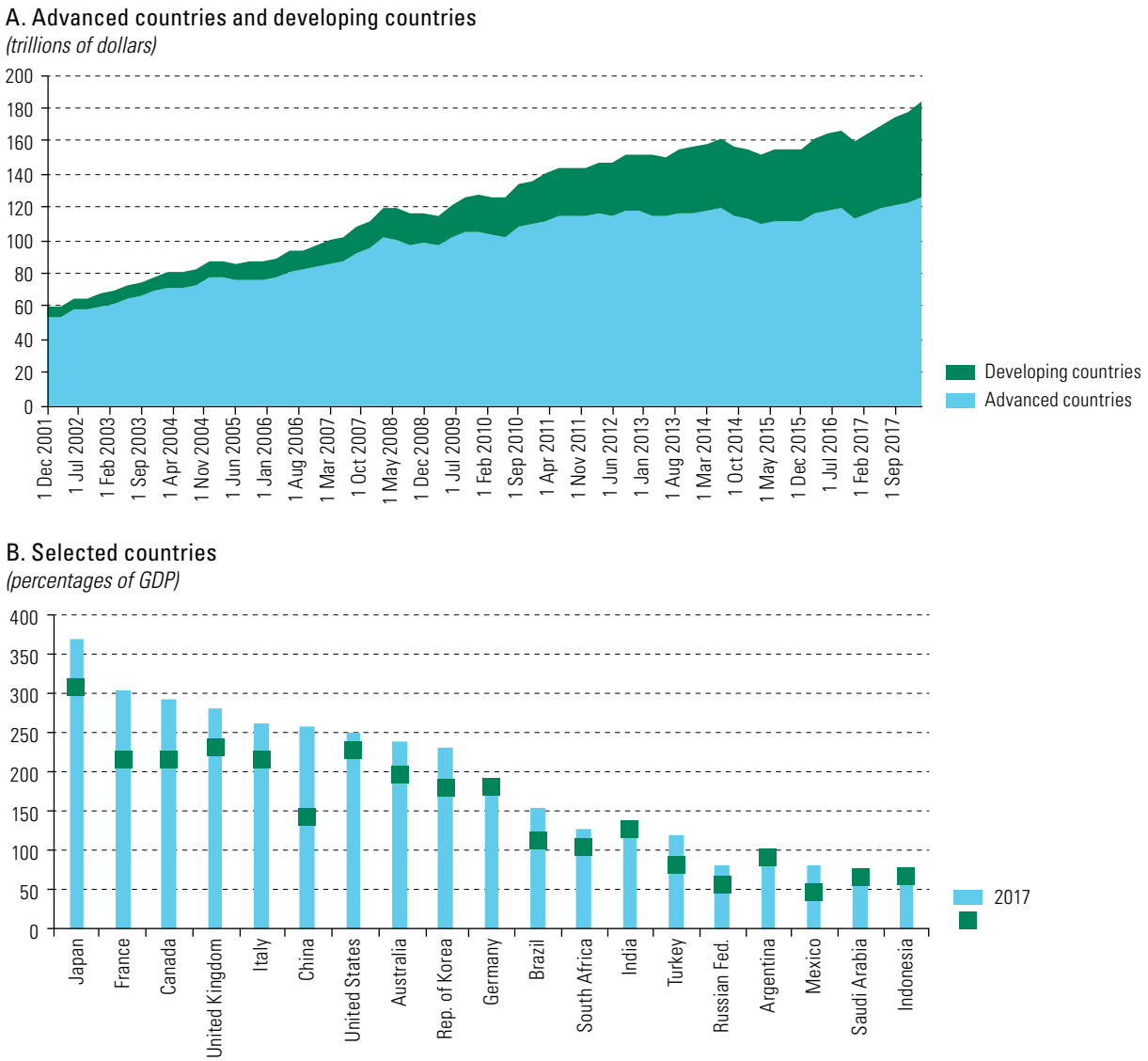
Figure I.6
Japan, United States and eurozone: central bank balance sheets, 2008–2018



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Federal Reserve Bank of St. Louis, Federal Reserve Economic Data (FRED) [online] https://fred.stlouisfed.org/.

The lower interest rates resulting from quantitative easing in the advanced countries have also driven massive borrowing worldwide in the last decade. This reached record levels in 2018, creating new strains in a context of monetary policy normalization and increasing uncertainty. Non-financial debt worldwide rose by US$ 77 trillion between 2008 and 2017 to a total of US$ 177.4 trillion (see figure I.7A). Emerging countries account for 60% of the increase in non-financial debt, and China alone for almost 40%. China is the G20 member where debt rose most as a share of GDP in this period, from 145% to 256% (see figure I.7B). Debt also grew in a number of European countries, mainly in the public sector, as a result of the banking sector rescue and higher fiscal spending to spur growth. Germany is an exception, as public debt there has declined.

Figure I.7
Selected countries and groupings: non-financial sector debt, 2001–2018



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Bank for International Settlements (BIS) [online] www.bis.org/statistics/totcredit.htm.

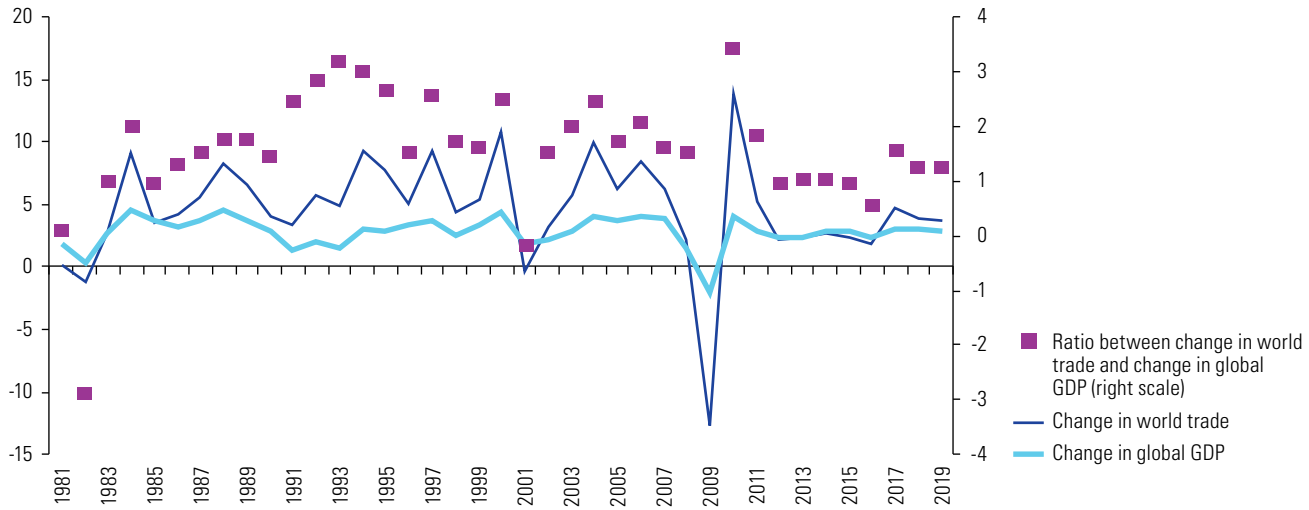
In sum, longer-term trends feeding discontent with globalization among large population groups in the advanced countries have not been reversed in the decade since the crisis. The macroeconomic policies adopted to deal with the crisis were not enough to return economies to dynamic growth, and nor were they able to reverse wage stagnation or growing inequality.

3. Trade dynamics are exacerbating global strains and imbalances

The improved performance of the global economy in 2017 was also reflected in trade. The volume of world trade in goods expanded by 4.7% that year, double the average annual growth rate of 2.3% between 2012 and 2016, to reach its highest

level since 2011 (see figure I.8). Trade grew by more than global GDP in 2017 for the first time since 2011 (1.6 times). A number of commodity prices rose that year after almost five years of declines, with particularly strong growth for oil and other energy commodities (26%) and minerals and metals (24%) (WTO, 2018a).

Figure I.8
World goods trade and global GDP: annual changes, 1981–2019[a]



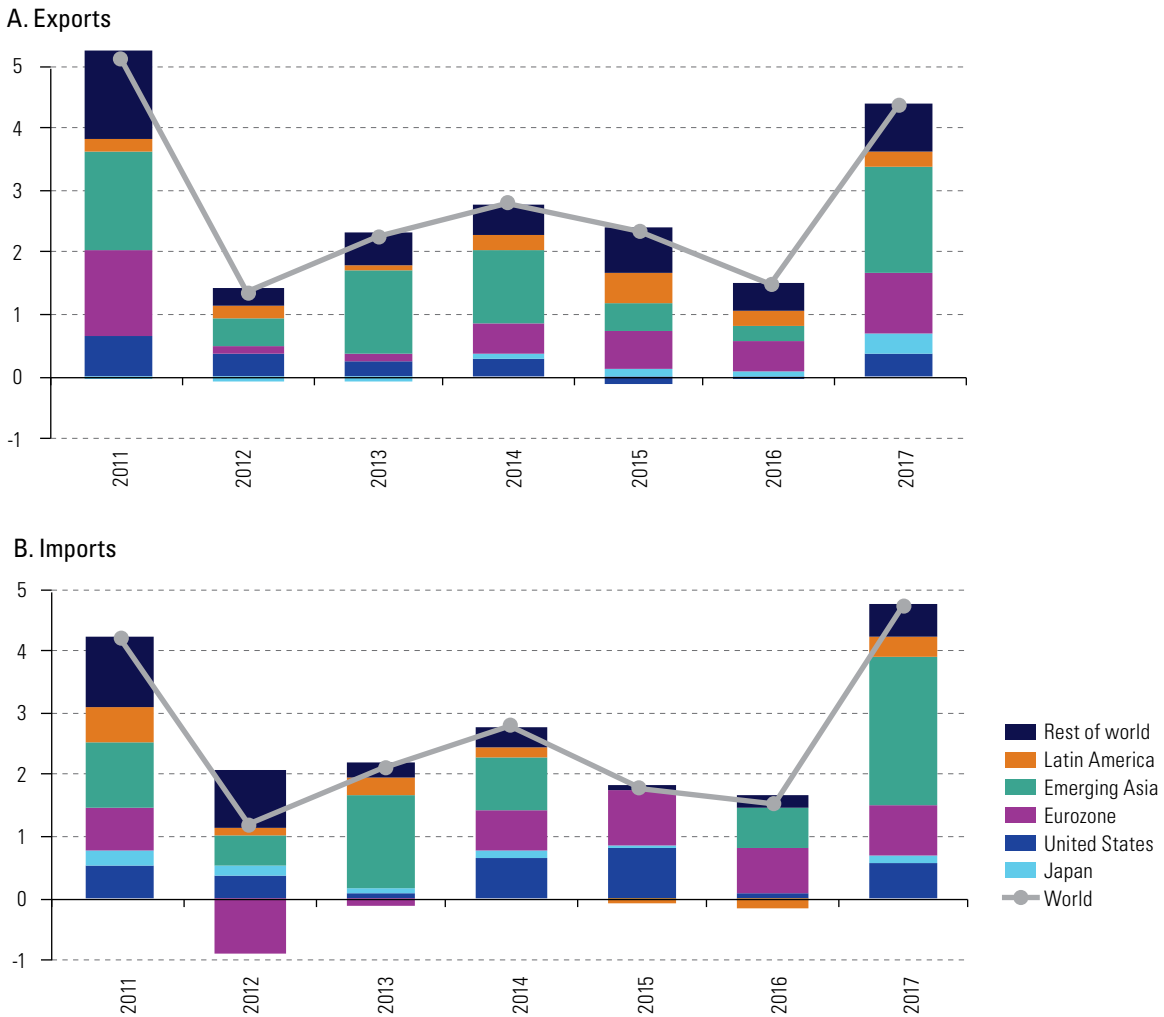
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Trade Organization (WTO) information.
[a] Figures for 2018 and 2019 are WTO projections.

Emerging Asia contributed over half of the world's import growth (54%) and over a third of its export growth (38%) in 2017 (see figure I.9). Within Asia, China made the greatest contribution with increases of 11.9% and 6.9% in its goods export and import volumes, respectively, underpinned by more dynamic global demand and strong growth of its economy (6.8%) (OECD, 2018a). Germany and the rest of the eurozone also contributed more to the growth of world exports (23%) than imports (18%). Conversely, the United States (the world's largest importer) contributed more to the expansion of world imports (13%) than exports (8%).

The recovery of world trade in 2017 seems to have been temporary, as a slowdown began in 2018 (see figure I.10). Volume expanded by 3.8% in the first half, and in September, the World Trade Organization (WTO) made downward revisions to its projections for 2018 (from 4.4% to 3.9%) and 2019 (from 4.0% to 3.7%) (WTO, 2018b). There are several reasons for this slowdown. First, global demand began to lose dynamism because of increasing heterogeneity in the growth patterns of the leading economies. Second, rising volatility in financial markets, related to the normalization of monetary policy in the United States, has also been affecting demand by weakening the currencies of a number of emerging markets. Third, there has been a worsening of trade tensions, particularly between China and the United States. Although the measures announced up to the end of September only affected 2.5% of global goods trade (Azevedo, 2018), there have already been real effects on the trade and prices of the affected products, such as steel and aluminium (OECD, 2018b). The accumulation

of tariff increases during 2018 and the prospect of trade tensions continuing to rise have created an environment of great uncertainty (see section D). The more the current tensions escalate, the greater the negative impact on different global value chains[3] and thence on the dynamism of world trade over the coming years.

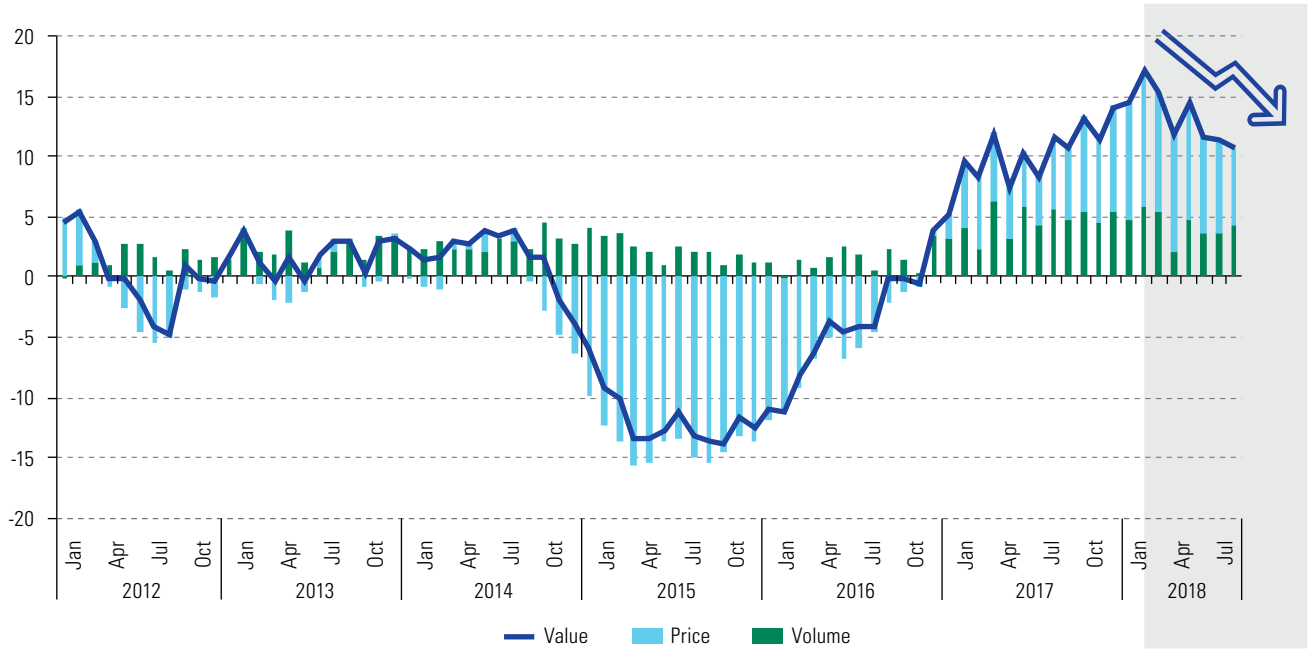
Figure I.9
Selected countries and regions: contributions to world trade volume growth, 2011–2017
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of CPB Netherlands Bureau for Economic Policy Analysis, World Trade Monitor.

[3] For example, in August 2018 the United States carmaker Ford announced the cancellation of plans to import its Chinese-built Focus Active model into the United States because of the 25% surcharge on automobiles imported from that country. The expectation is that other countries might take similar decisions if the Administration imposes surcharges on automobiles from other origins for national security reasons (Bloomberg, 2018).

Figure I.10
Monthly year-on-year changes in world goods trade, January 2012–July 2018
(Percentages)



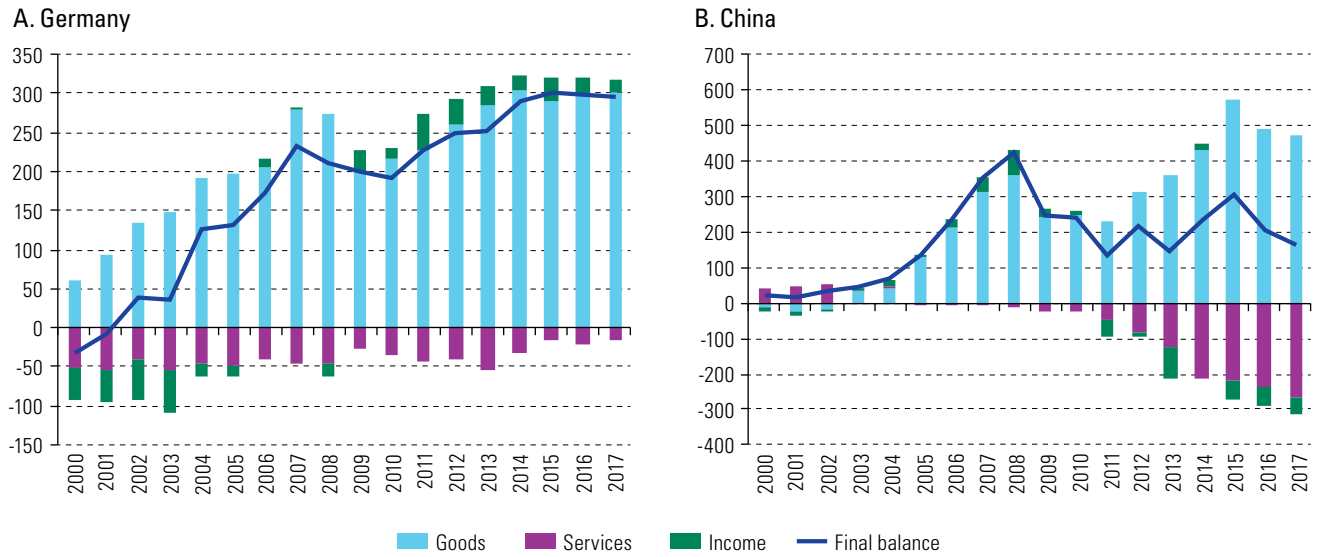
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of CPB Netherlands Bureau of Economic Policy Analysis, World Trade Monitor.

Trade is unlikely to become an engine of growth again if global aggregate demand does not recover its dynamism. In this context, the question arises as to which countries might drive global imports. One answer could be greater macroeconomic policy coordination between the leading economies to activate demand by way of higher wages, greater investment or increased fiscal spending, particularly in economies with trade surpluses. This in turn would help to reduce the trade deficit of the United States, easing the current trade tensions. Such coordination has not occurred, however. On the contrary, the differentiated dynamics of export and import growth in the leading economies have become more marked in recent years, and this has resulted in persistent imbalances between their current account results.

One of the imbalances creating the greatest tensions is the persistent deficit of the United States in its trade with China, Germany and some other economies. Germany ran a record goods trade surplus of some US$ 300 billion in 2017 (see figure I.11A). About a quarter of this surplus was with the United States, which has accordingly been considering the possibility of raising tariffs on some leading German export products, such as automobiles. China has also been running a goods trade surplus of between US$ 400 billion and US$ 500 billion a year. Much of this surplus is in its trade with the United States, and this has created growing bilateral strains (see section I.B). Conversely, China's services trade deficit has risen (see figure I.11B).[4] As a result, the country's current account surplus has declined greatly in recent years: from almost 10% of GDP in 2007, it went into deficit in the first quarter of 2018 (*The Economist,* 2018).

[4] The increased services trade deficit is due to three main factors: (i) strong growth in Chinese tourism abroad, (ii) growing imports of sophisticated services (such as research and development, business and professional services) to modernize the manufacturing industry and (iii) the rebalancing of the Chinese economy away from investment and towards consumption, which has been increasing imports of services.

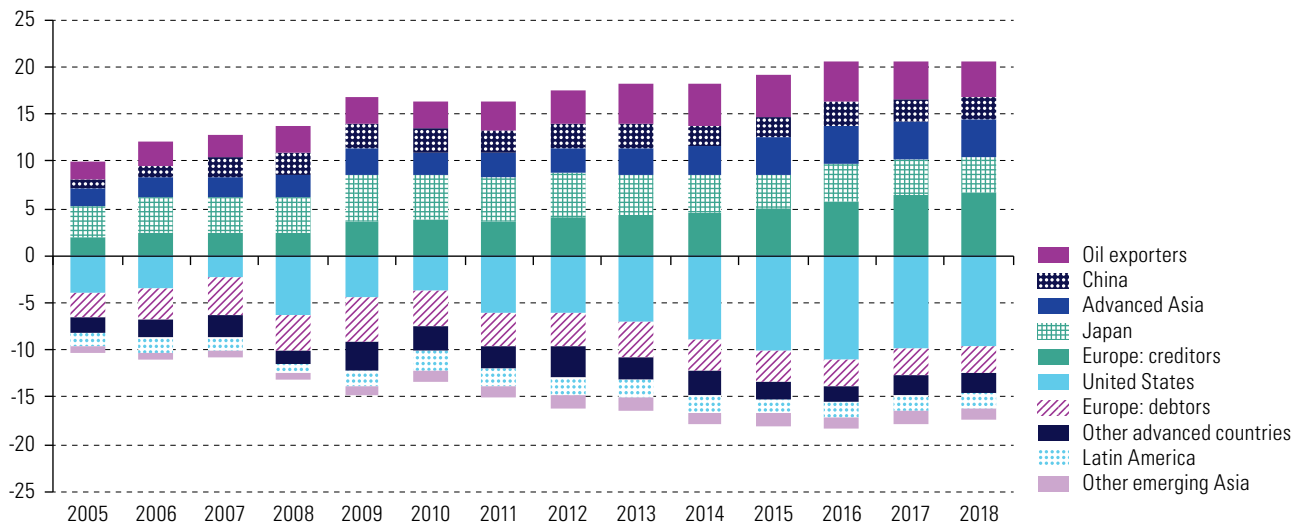
Figure I.11
China and Germany: goods and services trade balances and income balances, 2000–2017
(Billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of International Monetary Fund (IMF), IMF DataMapper, 2018 [online] https://www.imf.org/external/datamapper/datasets/BOP.

The persistent imbalances between the trade and current accounts of the leading economies have accumulated over time. As a result, net creditor and debtor positions have become more marked relative to world GDP (see figure I.12). On the creditor side, the increase has been accounted for mainly by Germany and other European countries with long-standing current account surpluses. On the debtor side, the increase has been due above all to the United States, Canada, France and the United Kingdom.

Figure I.12
Selected countries and groupings: net international investment positions, 2005–2018[a]
(Percentages of global GDP)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of International Monetary Fund (IMF), IMF DataMapper, 2018 [online] https://www.imf.org/external/datamapper/datasets/BOP.
[a] Figures for 2018 are projections.

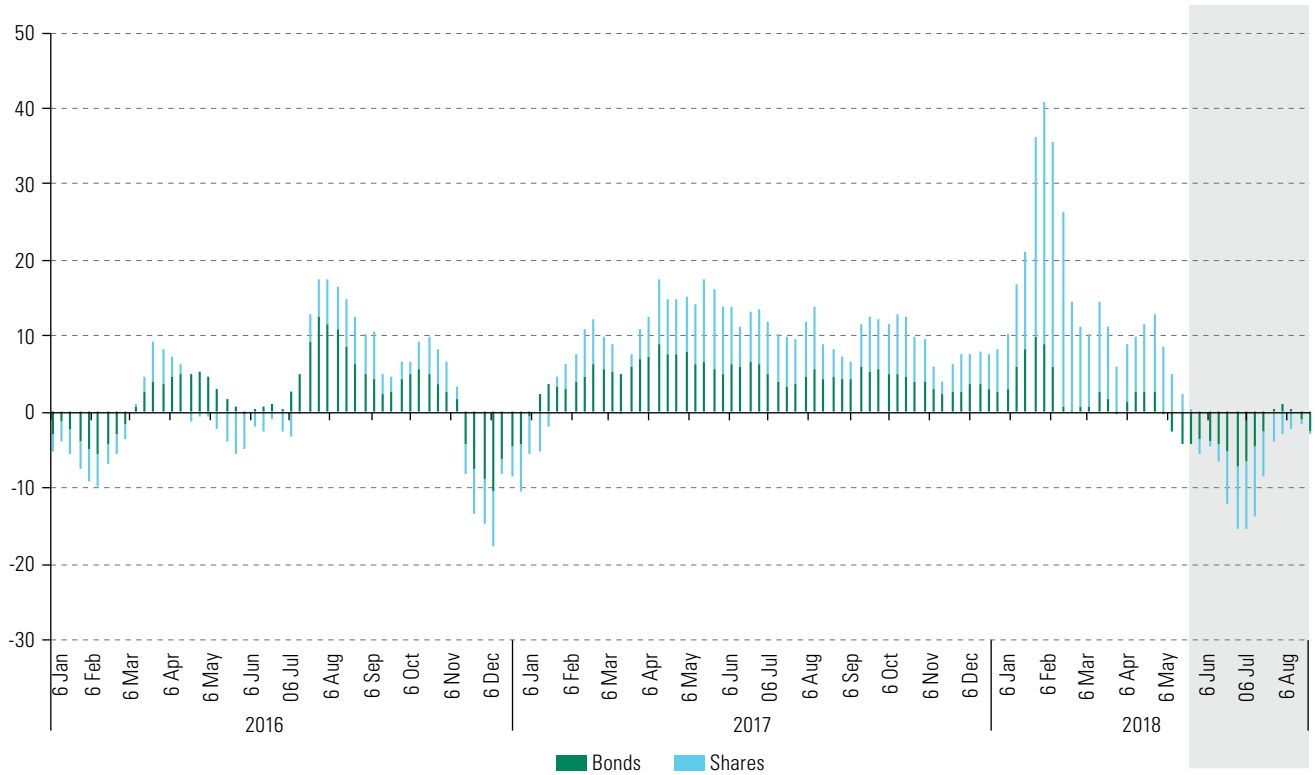
In many countries, there are structural reasons for creditor and debtor positions, which is why they persist over time. First, the current account balance is often connected with the productive structure (see section I.4). Second, it also depends on countries' demographic structure and phase of development (Barnes, Lawson and Radziwill, 2010). The advanced countries of Asia and Europe, whose populations are ageing rapidly, need to build up funds that can be drawn down when their workers retire. If these countries lack investment opportunities at home, they will invest abroad and run a current account surplus. Conversely, developing countries with ample investment opportunities import capital, which justifies a current account deficit insofar as higher external borrowing can be paid back out of future income (Obstfeld, 2017). The United States is a special case, as it has the "exorbitant privilege" of paying for its imports in its own currency, which means it can keep up a large deficit almost indefinitely (Aglietta and Coudert, 2017).

The current account balance also depends on the policy mix adopted by each country. In countries with a tendency to run negative balances, it has been argued that there is an incompatibility between three goals, namely participating fully in globalization, balancing the current account and attaining full employment (social equilibrium), of which only two can be prioritized. Combining the first goal with the second creates an external constraint that translates into weak growth and thus high unemployment. Combining globalization with full employment often results in a current account deficit. Lastly, combining external stability with full employment requires certain limits to be placed on the free movement of trade and financial flows (ECLAC, 2016). Before the global financial crisis, countries on the periphery of the eurozone opted for the second combination. Subsequently, though, they had to rebalance their current accounts with austerity policies, which resulted in economic contraction and unemployment. Some emerging countries are now taking a similar route, as set out in section I.A.4.

4. Vulnerability and external constraints in developing countries

Vulnerabilities and external constraints have emerged in several developing countries so far in 2018. Higher benchmark rates in the United States and more volatile financial markets have resulted in net capital outflows from these countries (see figure I.13). This has led to a sharp depreciation in the exchange rates of the countries with the least sound macroeconomic fundamentals (see figure I.14). Depreciation has, in turn, increased the cost in local currency of interest payments and the repayment of dollar-denominated external debt. In 2018, the countries with the highest percentages of this type of debt are Argentina, Hungary, Turkey, Poland and Chile (Institute of International Finance, 2018).

Figure I.13
Emerging countries: net capital flows, January 2016–August 2018
(Billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Fund Research for global GDP and Central Bank of Chile, *Informe de política monetaria,* Santiago, September 2018.

Figure I.14
Selected countries: bilateral exchange rate with the dollar, January–August 2018
(Index: 1 January 2018=100)

A. China, India, Russian Federation, South Africa and Turkey

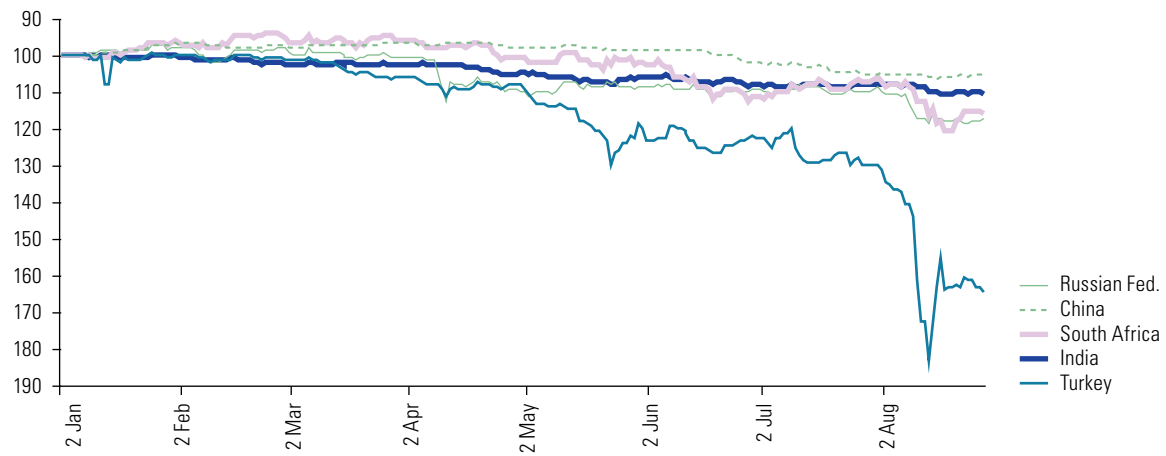
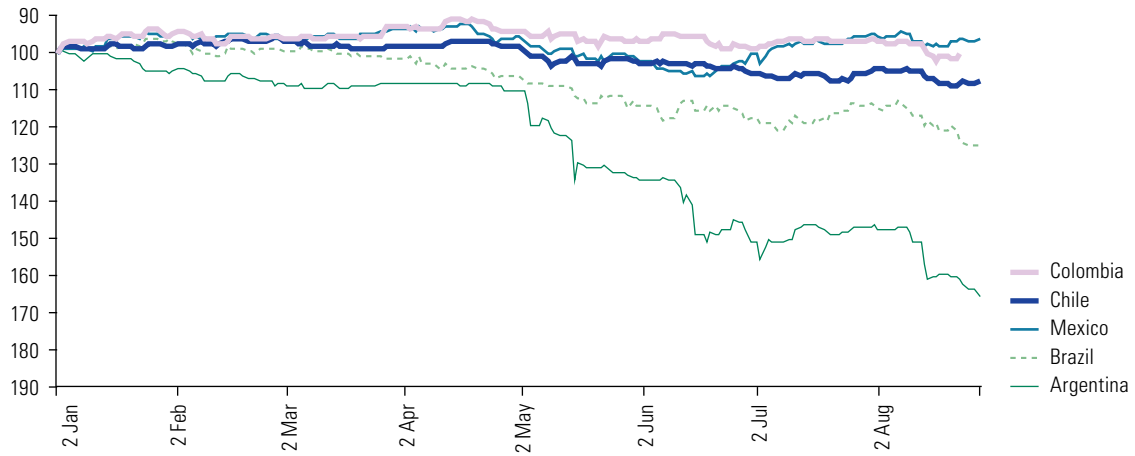


Figure I.14 (concluded)

B. Latin American countries



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Bank for International Settlements (BIS), [online] http://www.bis.org/statistics/totcredit.htm.

External constraints limit the growth of many countries in Latin America and the Caribbean and other parts of the world. Medium-term growth is dependent on a trade balance close to equilibrium. Over the past few decades, several developing countries with a rigid specialization in natural resources have generally seen their imports grow faster than their exports. This stems from the fact that demand for exportable commodities is more income-inelastic than demand for imported industrial goods, except during a commodity boom. As result, many of these countries suffer from persistent deficits, unsustainable external debt and external crises with exchange-rate depreciation, net capital outflows and economic recessions (ECLAC, 2012).

Dynamic participation in global trade is needed to overcome external constraints. Countries whose growth has remained robust over a long period have benefited from stronger increases in exports than in imports. The crucial component is a constantly changing export structure. This process requires technology absorption, the creation and expansion of new industries with higher value added and productivity, and the movement of workers from traditional to modern activities. The main recent examples of such shifts have occurred in Asia, for example China, Japan and the Republic of Korea (ECLAC, 2012).

Thanks to the commodity boom between 2003 and 2012, several countries specializing in commodity exports within and outside the region managed to ease their external constraints temporarily. As their terms of trade improved, these countries posted strong growth for several years running (see box I.1). However, owing to the reprimarization of their economies, they were unable to improve technological capacity or diversify the export basket to maintain the momentum of exports once the commodity supercycle had ended.

Box I.1
Latin America: capacity, productive structure and external constraints

Given the coevolution of capacity, productive structure and external constraints, the behaviour of trade and growth must be examined in combination, beyond short-term fluctuations. The figure below shows the growth rate (Y-axis) and the trade balance (X-axis) in Latin America for the 1960–2016 period. The subperiods are related to different phases of global trade and finance.

Quadrants A and C correspond to trade balance positions that are unsustainable in the medium term, while quadrants B and D indicate sustainable positions (in other words, equal to zero or positive). The countries in quadrants A and C are either making adjustments or should do so in the near future to avoid debt overhangs. Although these countries receive external financing for a time, they are highly vulnerable to changes in financial market expectations or liquidity, for example Argentina today.

Latin America: phases of external constraint and economic growth, 1960–2016

Source: Economic Commission for Latin America and the Caribbean (ECLAC).

Growth was strong and stable in the 1960s. The expansion of global trade in that period, along with import substitution policies or export diversification, helped peripheral economies to overcome external constraints. In the second half of the 1970s, most countries in the region amassed large amounts of debt: Latin America posted strong growth despite the global recession, but also accumulated large trade deficits. In the aftermath of the shock triggered by the interest rate hikes in the United States in 1979, debt became unpayable. This resulted in a sharp correction between 1981 and 1990, when trade surpluses were used to service debt, while investment and growth rates plummeted. The Brady Plan and the return of capital in the 1990s eased external constraints and paved the way for a new growth phase. Low interest rates in developed countries resulted in a rise in liquidity and capital flows to emerging countries. In peripheral economies, this was combined with policies for exchange-rate appreciation, often as part of stabilization programmes in response to high inflation in the 1980s. The resulting loss of competitiveness and borrowing stimulus led to fresh crises in the late 1990s and early 2000s, which closed this second cycle of appreciation, indebtedness, crisis and correction.

The pattern seen between the 1970s and the 2000s ended with the natural resources boom from 2003 onwards. The stronger growth rates generated external surpluses insofar as strong demand for commodities boosted export volumes and prices. Although the 2008 crisis weighed on that positive trend, this effect was temporary and exports continued to grow until 2012. Thereafter, global trade slowed and the region's exports suffered, especially commodity exports. The situation has been somewhat brighter for Mexico and Central American countries, as exporters of manufactured goods to the United States, which has bounced back faster from the crisis than other advanced economies.

On the basis of a longer-term perspective, the region's growth rates —low and volatile since 1980— are explained by two structural factors. First, the absence of diversification and the widening of the technology gap, which weigh on export momentum and increase long-run external constraints. Regional exports have in fact become increasingly concentrated in natural resources and manufactured goods with little local value added. Second, the absence of macroprudential policies —including capital controls— that could reduce vulnerability to liquidity cycles and global market expectations.

Source: Economic Commission for Latin America and the Caribbean (ECLAC).

Following the decline in commodity prices in 2013, several commodity-exporting countries were able to maintain growth, thanks in part to cheap external financing. However, this resulted in larger current account deficits and, more recently, in declining growth, as those deficits began to look less sustainable. A noteworthy example is Argentina, where the deficit stood at 0.4% of GDP in 2010 and is projected to reach 5.1% of GDP in 2018 (IMF, 2018b). This year, capital outflows and the corresponding exchange-rate depreciation have resulted in a contraction in imports and growth.

Brazil's deficit remained above 3% of GDP between 2010 and 2015, following a surplus in the five years prior to the crisis, during the commodity export boom. Since then, the country has suffered as a result of the reprimarization of its exports, which increased external constraints on its growth (Caputi and others, 2018). The 41% collapse in export prices in 2015 compared with 2011, along with the decline in domestic demand and a fiscal crisis, led to a recession that year and the following one (*The Economist*, 2016). A third example is South Africa, which has run current account deficits since 2004 and has racked up its external debt. Financing this debt with short-term capital increased the country's vulnerability to changes in global financial markets, such as those that occurred in 2018 (IMF, 2018c).

The lack of export competitiveness is not exclusive to commodity-exporting countries. For instance, between 2010 and 2017, Turkey maintained current account deficits between 3.8% and 8.9% of GDP. These large deficits boosted public and private external debt, thus increasing the country's vulnerability to changes in global financial markets. As a result, in 2018, net capital outflows from Turkey resulted in a sharp exchange rate depreciation and a contraction in imports and growth.

5. Towards a break with the "pro-globalization consensus"?

The sluggish recovery of advanced economies in the wake of the financial crisis, coupled with the effects of austerity measures, stagnating wages and increasing inequality, has fuelled the emergence of forces that call into question the economic policies that those countries have been implementing since the 1980s. In the United States and in various European countries alike, political parties and movements that have fashioned themselves as detractors of globalization in all its forms have gained strength. While their specific demands vary from country to country, these factions generally share a negative view of offshoring, trade liberalization and immigration, especially when companies move to —or goods and services and people move from— low-income countries.

Another common denominator among the various anti-globalization political platforms is the rejection of the subordination of nation States to supranational norms and institutions that limit their sovereignty. The main demand of proponents of Brexit, for example, was for the United Kingdom to regain full control over migration policy. Moreover, in several countries in continental Europe, there is rising criticism of European Union rules governing the free movement of persons or the maximum allowable fiscal deficit and public debt for euro area countries, among other issues. Nevertheless, it is because this supranational governance structure exists that Europe has not drastically modified its policies on globalization and has maintained its commitment to openness and multilateralism (one exception is the issue of immigration from Africa and the Middle East, on which European countries are deeply divided). By contrast, the arrival of a new Administration in the United States in 2017 has heralded significant shifts in policy that reflect its rebuke of globalization and the rules and institutions that have governed it in the post-war period.

Since the 1980s, the United States has been one of the main promoters of economic globalization; much of the world's trade and foreign direct investment (FDI) flows are concentrated in regional and global value chains headed by United States multinational corporations. They capture a significant share of the value generated in

these chains, since they often control the stages with the greatest value added and knowledge content (research and development, design and marketing, among others). They also decide in which countries —and under what conditions— each link in the chain is located. The United States has also been a major proponent (and beneficiary) of financial globalization. With the United States dollar being the world's main reserve currency, the country has been able to use external savings to finance, at a low cost, the current account deficit it has been running almost continuously since 1982. Over the last three decades, United States trade policy has been consistent with a generally favourable view of globalization, regardless of Administrations' political persuasions. In fact, the 14 free trade agreements to which the United States is party were entered into from 1985 onward, with 12 of them being signed between 2000 and 2007.[5]

Notwithstanding the above, globalization has also sparked tensions for the United States economy and workers, especially in the manufacturing sector. This sector's share of GDP has shrunk steadily in recent decades, from 21% in 1980 to 12% in 2016.[6] Similarly, manufacturing employment's share of total employment fell from 25% in 1973 to 10% in 2016 (Lawrence, 2017).[7] Various hypotheses have been advanced to explain the loss of manufacturing jobs. For some, this is mainly attributable to rapid productivity gains in manufacturing up to 2010, brought about, in part, by technological changes such as automation and digitization (Lawrence, 2017; Dollar, 2016). Others argue that the offshoring of industrial activities to developing countries, competition from manufactures imported from such countries and China's "mercantilist practices" have also been significant contributing factors (Nager, 2017; Atkinson, 2018). Fort, Pierce, and Schott (2017) note that manufacturing job losses in United States manufacturing firms between 1977 and 2012 were more than offset by the creation of non-manufacturing jobs in those same firms. Around one third of those new jobs are related to knowledge-intensive services such as design and engineering.

The entry into office of the current Administration in 2017 brought about a marked shift in the traditional position of the United States on globalization. Tapping into the discontent among large swaths of the population, especially after the 2008–2009 crisis, this Administration has been openly critical of foreign competition in international trade, of the offshoring of United States companies (mainly manufacturing) and of immigration from developing countries. According to this vision, the persistent trade deficits with partners such as Germany, China, Japan and Mexico (see figure I.15) are attributable mainly to those countries' unfair practices or the lack of reciprocity in access conditions to the respective markets.[8] The opinion with respect to China, a country with which the United States is competing for technological supremacy, is particularly harsh (see section I.B).

In order to reduce trade deficits and reverse —or at least slow— the offshoring of industrial firms, the current Administration is implementing a set of policies following the doctrine of "America First". Trade policy plays a central role in this regard, as evidenced by a number of landmark actions, including: the withdrawal from the Trans-Pacific Partnership (TPP), which was a product of and given strategic importance by the Obama Administration; the indefinite suspension of negotiations on the Transatlantic Trade and Investment Partnership (TTIP) between the United States and the European Union; the renegotiation of the free trade agreement with the Republic

5 See Organization of American States (OAS), Foreign Trade Information System (SICE) [online] http://www.sice.oas.org/ctyindex/USA/USAagreements_s.asp.

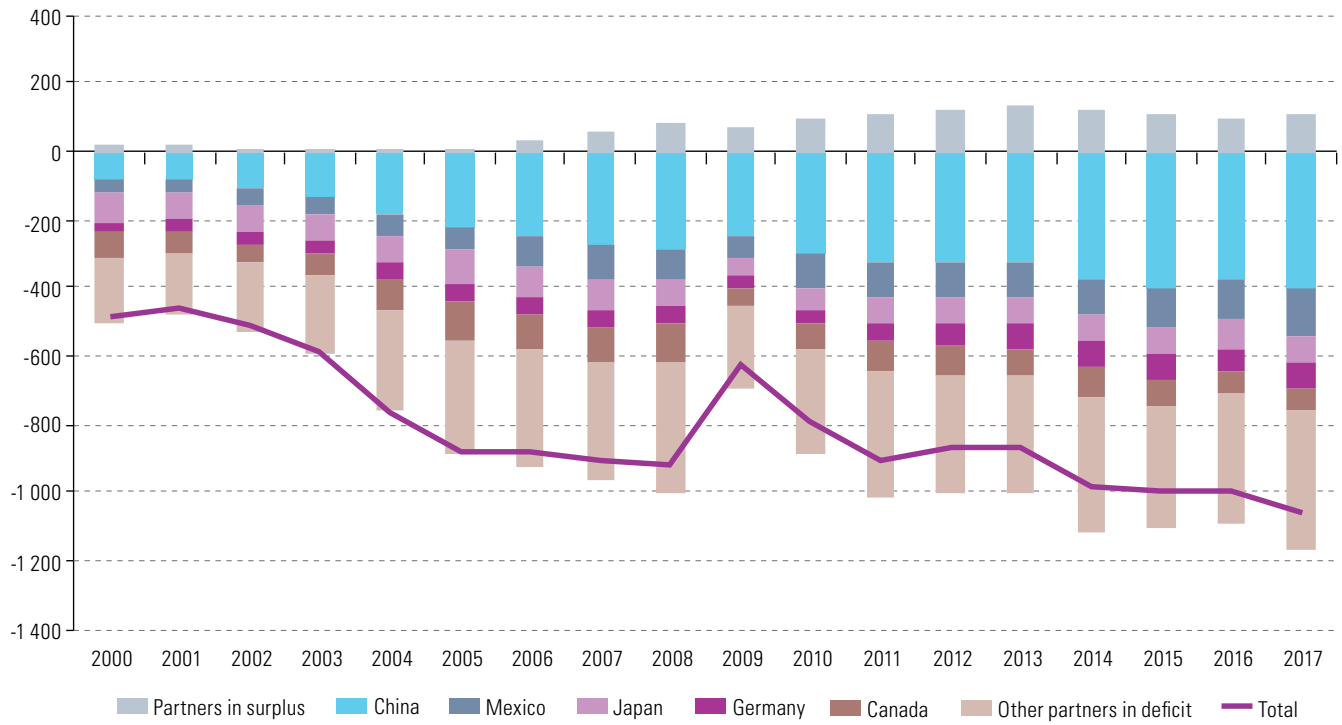
6 Calculated from United Nations data, National Accounts Main Aggregates Database [online] https://unstats.un.org/unsd/snaama/Introduction.asp.

7 This phenomenon is not exclusive to the United States: while it has seen a 25% drop in manufacturing employment between 1990 and 2016, in the same period Germany, France, Italy, Japan and the United Kingdom recorded declines of 24%, 34%, 24%, 31% and 47%, respectively (Levinson, 2018, pp. 9 and 10).

8 For example, the Administration has repeatedly complained that the United States most-favoured-nation tariff for automobiles (2.5%) is much lower than that of the European Union (10%) and China (formerly 25%, recently reduced to 15%) and argued that this constitutes unfair competition (Inside U.S. Trade, 2018).

of Korea, with more favourable terms for the United States; and the replacement of the North American Free Trade Agreement (NAFTA) by a new agreement with Canada and Mexico (see box I.2). In 2018, the United States implemented a number of tariff hikes, aimed primarily at products imported from China (see section I.D).

Figure I.15
United States: goods trade balance with selected trading partners, 2000–2017
(Billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of the UN Comtrade - International Trade Statistics Database.

Despite the current Administration's critical discourse on previously-negotiated trade agreements, it used the recent negotiations with Canada and Mexico as an opportunity to expand the commitments contained in those agreements in areas that are crucial to preserving United States economic and technological dominance. This is particularly true of intellectual property and digital trade, two issues on which there is clear continuity with the position of previous Administrations, as demonstrated by the outcome of the negotiations.

In addition to the continuity element mentioned above, the negotiation of the United States-Mexico-Canada Agreement also illustrates the new thrust of the current Administration's trade policy. For example, the adoption of rules of origin for a number of sectors (automotive, textile, chemical and others) that are stricter than those provided for in the original agreement, seeks to ensure greater participation of United States firms in North American value chains while reducing that of extraregional suppliers, or even those from Mexico. At the same time, the new agreement contains an unprecedented provision —included at the behest of the United States— that empowers any of the Parties to terminate the Agreement if another Party enters into a trade agreement with a "non-market" economy. While the countries that could fall into this category are not identified, the provision clearly targets China. In essence, the trade and industrial policies being implemented in the United States are symptomatic of its attempts to preserve its economic and technological leadership, which China is increasingly challanging. This topic is addressed in section I.B.

Box I.2
From the North American Free Trade Agreement (NAFTA) to the United States-Mexico-Canada Agreement

In August 2017, the renegotiation of the North American Free Trade Agreement (NAFTA), signed in 1992 and in force since 1994, was launched at the request of the United States. Until May 2018, trilateral negotiations were held between Canada, the United States and Mexico. After a lull, negotiations resumed bilaterally between Mexico and the United States in late July, at the express wish of the United States Administration. On 27 August 2018, the successful conclusion of talks between the United States and Mexico was announced, and on 30 September, the incorporation of Canada was announced.

The new trilateral agreement, which replaces NAFTA and is entitled "United States-Mexico-Canada Agreement", will be signed at the end of November and is expected to be endorsed by the United States Congress in 2019. Its main points are outlined in the table below.

Issue	Outcome
Sunset clause	– The Agreement will have an initial duration of 16 years, with a first review after 6 years. The duration shall be extended for successive periods of 16 years.
Rules of origin for automotive goods	– The regional content required for traded vehicles to be tariff-free is raised from 62.5% to 75%. – At least 40% of the value of light automobiles and at least 45% of the value of pick-up trucks and heavy-duty vehicles must be produced in an area of North America where sector wages are above US$ 16 per hour. – The most-favoured-nation tariff (2.5%) will be applied to automobiles assembled in Mexico that do not comply with the new rule of origin upon import into the United States.
Investor-State dispute settlement	– Between the United States and Mexico the provision remains the same as in NAFTA chapter 11 regarding investments in oil and gas, electricity generation, infrastructure and telecommunications. In other sectors, dispute settlement may be invoked only in cases of expropriation of the investment or if the host State refuses to grant national or most-favoured-nation treatment to the foreign investor. – This mechanism is not applicable to Canada.
Intellectual property	The following provisions are included interalia: – Increased sanctions for piracy and theft of trade secrets – Copyright protection extended to 70 years after the author's death – Minimum 10-year period of protection of test data for biological drugs
Digital trade	The content of this chapter is similar to the provisions of the Trans-Pacific Partnership Agreement (TPP). The following provisions are included: – Imposition of customs duties on electronically transmitted digital products (electronic books, video games, music, software and others) prohibited – Unrestricted cross-border transfer of information by electronic means
Labour rights	– Mexico commits to taking legislative action to effectively recognize the right to collective bargaining, with a view to aligning itself with international and United States standards.

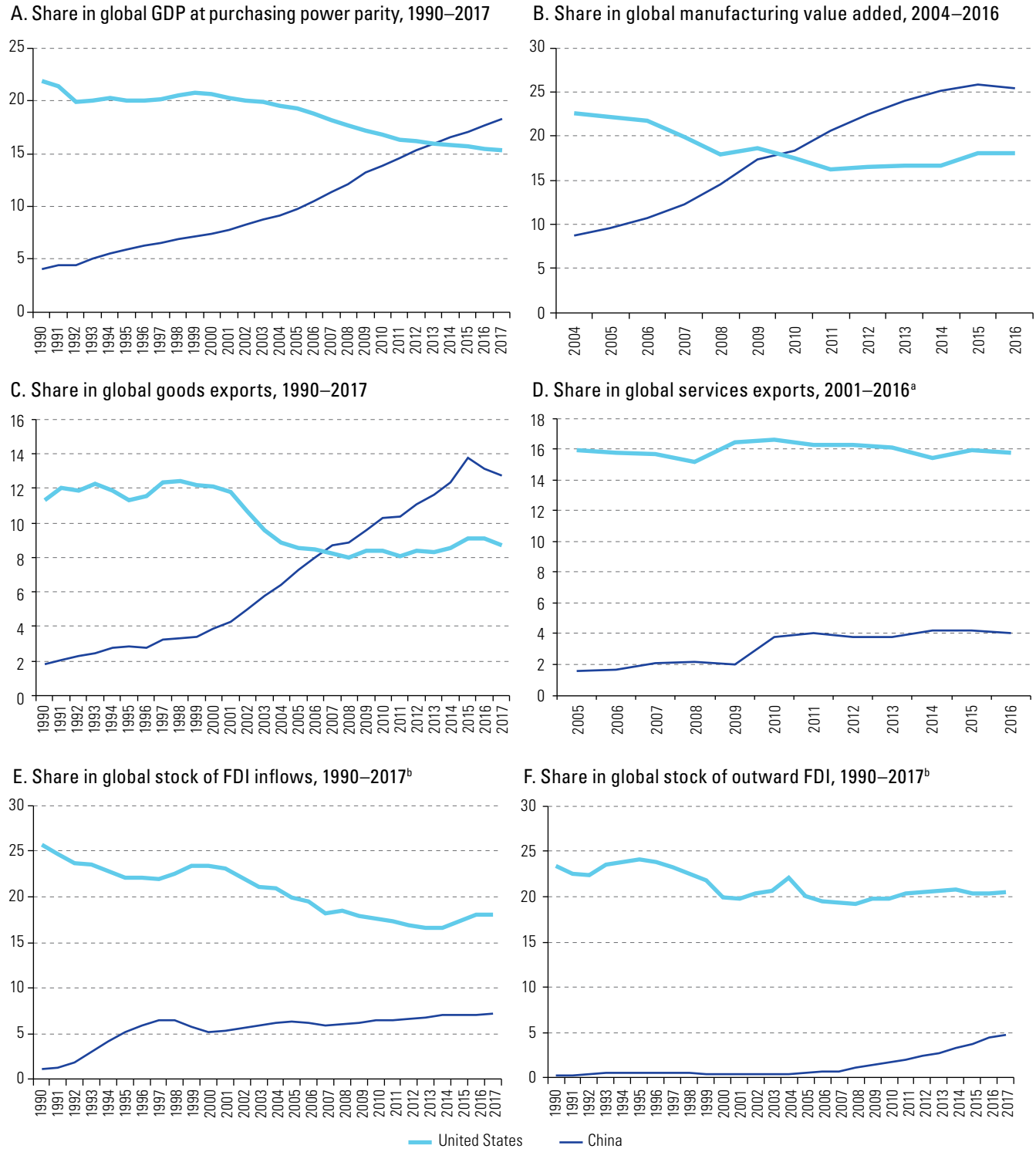
The conclusion of the United States-Mexico-Canada Agreement ensures that Mexico and Canada continue their preferential trade relationship with the United States. It should also maintain the trilateral agreement, which is better suited to the configuration of North American value chains than the two bilateral agreements initially preferred by the United States. However, the new rules of origin agreed for the automotive sector represent a major concession that Mexico was obliged to make, especially in view of the stipulation that a large percentage of the regional content must be produced in a "high wage" country (meaning Canada or the United States). To mitigate the impact on its automotive and auto parts industry, Mexico secured a deal in which the new rules of origin would be implemented gradually beginning on 1 January 2020, with full implementation by 1 January 2023.

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United States Trade Representative (RCEU), "Modernizing NAFTA into a 21st century trade agreement" [online] https://ustr.gov/about-us/policy-offices/press-office/fact-sheets/2018/october/united-states%E2%80%93mexico%E2%80%93canada-trade-fa-1; "Rebalancing trade to support manufacturing" [online] https://ustr.gov/about-us/policy-offices/press-office/fact-sheets/2018/october/united-states%E2%80%93mexico%E2%80%93canada-trade-fa-0 y "Strengthening North American trade in agriculture" [online] https://ustr.gov/about-us/policy-offices/press-office/fact-sheets/2018/october/united-states%E2%80%93mexico%E2%80%93canada-trade-fa-2.

B. The United States and China: a trade and technological dispute

Over the course of 2018, concern has mounted significantly over growing trade tensions between the United States and China. Although the escalation of restrictive measures involves several other players (see section D), the background to the current tensions is undeniably closely related to the rivalry between the two countries over global economic and technological leadership. In recent decades, China has greatly narrowed or even closed its gaps vis-à-vis the United States in a number of economic variables (see figure I.16). Its GDP has been the largest in the world since 2014 measured by purchasing power parity and the second largest measured in current dollars. China has also been the world's largest producer of manufactures since 2010 and the leading exporter of goods since 2009 (by contrast, the dominance of the United States in services trade remains unrivalled). Since 2008, China has been the second greatest recipient of FDI, and in 2016 was the second largest outward foreign investor.

Figure I.16
China and the United States: indicators of production, trade and foreign direct investment
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of International Monetary Fund (IMF), World Economic Outlook Database, April 2018, for GDP; United Nations, National Accounts Main Aggregates Database for manufacturing value added; World Trade Organization (WTO), Statistics Database, for goods and services trade; and United Nations Conference on Trade and Development (UNCTAD), UNCTADSTAT data base, for foreign direct investment.

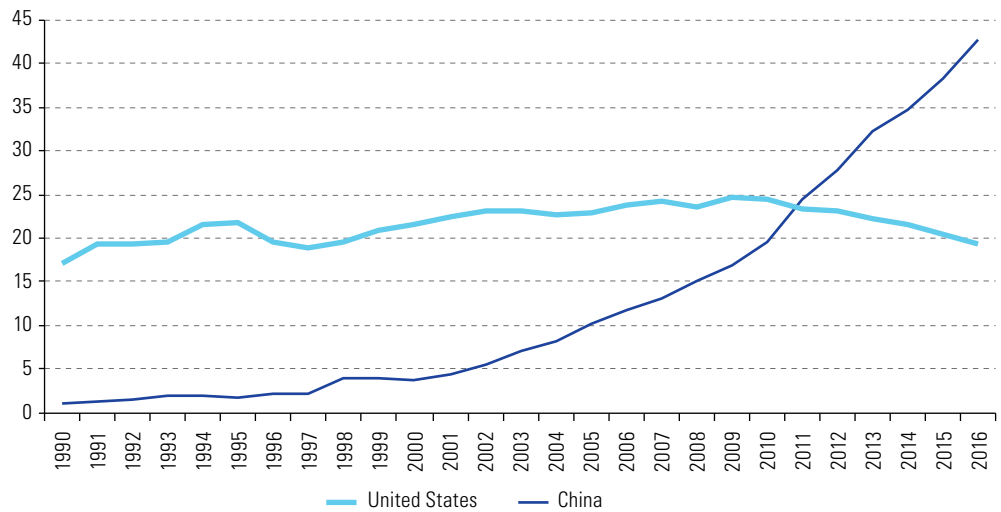
[a] Excludes transport and travel.

[b] FDI stocks were calculated on the basis of the stock reported in the UNCTADSTAT database, adjusted for depreciation and the producer price index of the manufacturing sector in the United States.

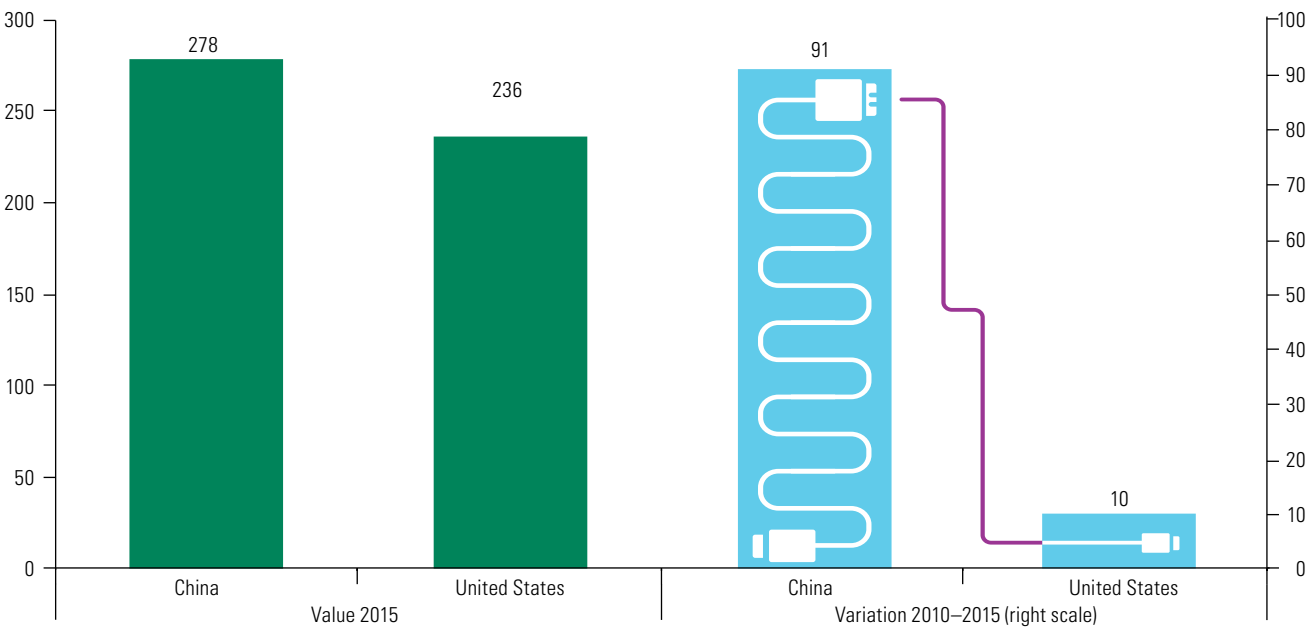
The narrowing of gaps between China and the United States is particularly notable in the technological sphere (see figure I.17). In 2016, China presented 1.3 million patent applications (43% of global applications), more than double the number presented by the United States (19%) and more than the combined applications presented by the United States, Japan, the Republic of Korea and the European Patent Office (WIPO, 2018, p. 12). In 2017, two Chinese technology companies, Huawei and ZTE, submitted the highest number of applications under the Patent Cooperation Treaty of the World Intellectual Property Organization (WIPO). Under this arrangement, firms may apply for the protection of an invention by submitting a single "international" patent application covering many countries, without needing to submit national requests separately. Overall, China displaced Japan as the second largest user of the Patent Cooperation Treaty in 2017, after the United States (see figure I.18).

Figure I.17
China and the United States: patenting and research and development indicators
(Percentages and billions of dollars)

A. Shares in total worldwide patent applications, 1990–2016



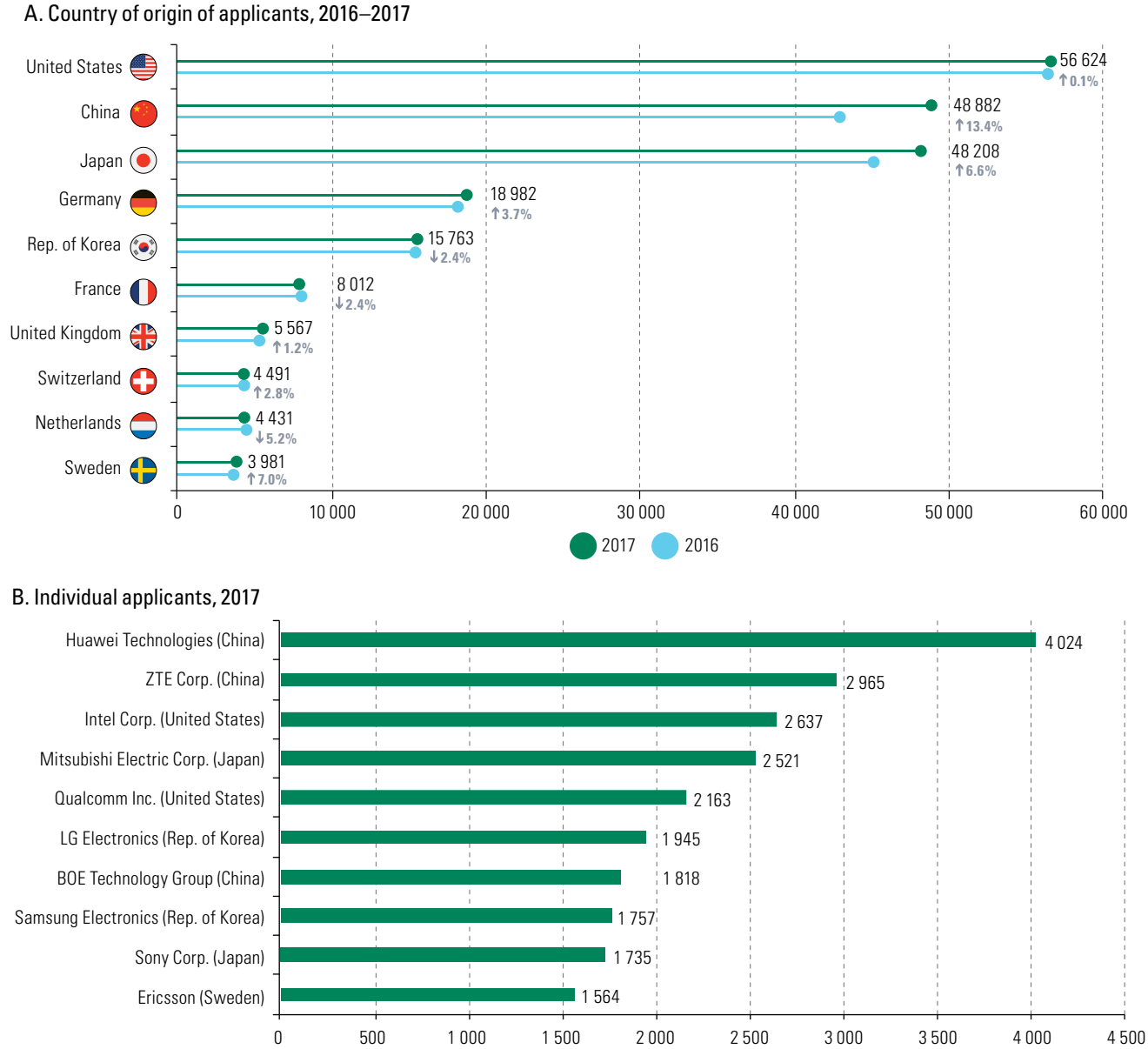
B. Expenditure on research and development in the manufacturing sector, 2015[a]



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Intellectual Property Organization (WIPO), WIPO IP Statistics Data Center, for patent applications, and M. Levinson, *U.S. Manufacturing in International Perspective*, Congressional Research Service, Washington, D.C., 21 February 2018 [online] https://fas.org/sgp/crs/misc/R42135.pdf, figures 13 and 14, for spending on research and development in the manufacturing sector.

[a] The value of R&D expenditure in the manufacturing sector is expressed in billions of dollars at purchasing power parity (PPP).

Figure I.18
Main users of the Patent Cooperation Treaty
(Number of applications)

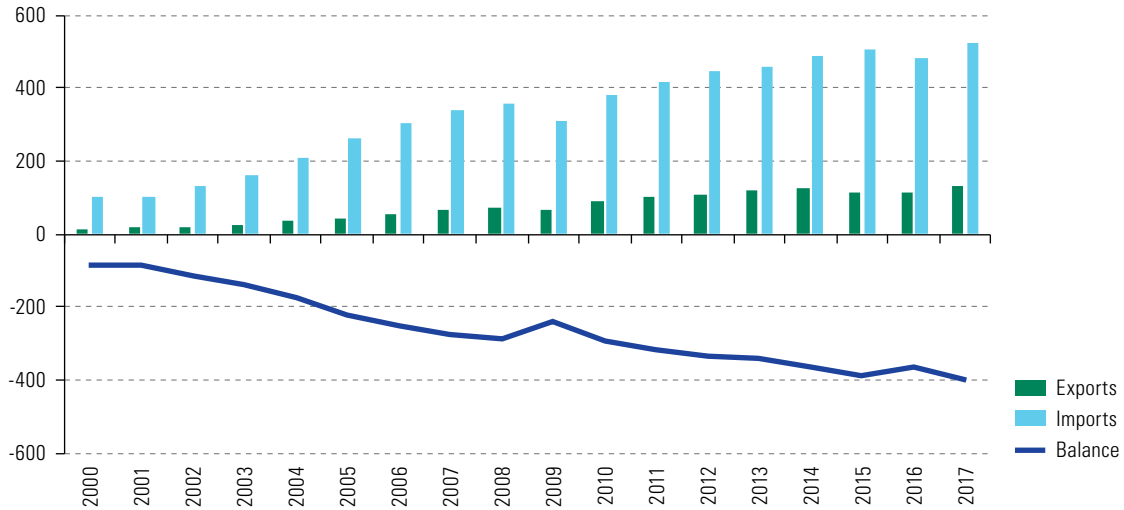


Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Intellectual Property Organization (WIPO), "Facts and Figures 2017" [online] http://www.wipo.int/edocs/infogdocs/en/ipfactsandfigures2017/.

The United States' goods trade deficit with China has increased almost fivefold this century, from US$ 84 billion in 2000 to US$ 396 billion in 2017. On average, since 2010, the value of United States imports from China has quadrupled its exports in the other direction (see figure I.19). The largest deficits are recorded in computers and other electronic products, electrical equipment and miscellaneous manufactures (see figure I.20). A significant portion of imports from China, especially in the electronics sector, is manufactured by United States companies with operations in China (for example, Apple and Intel). With the exception of

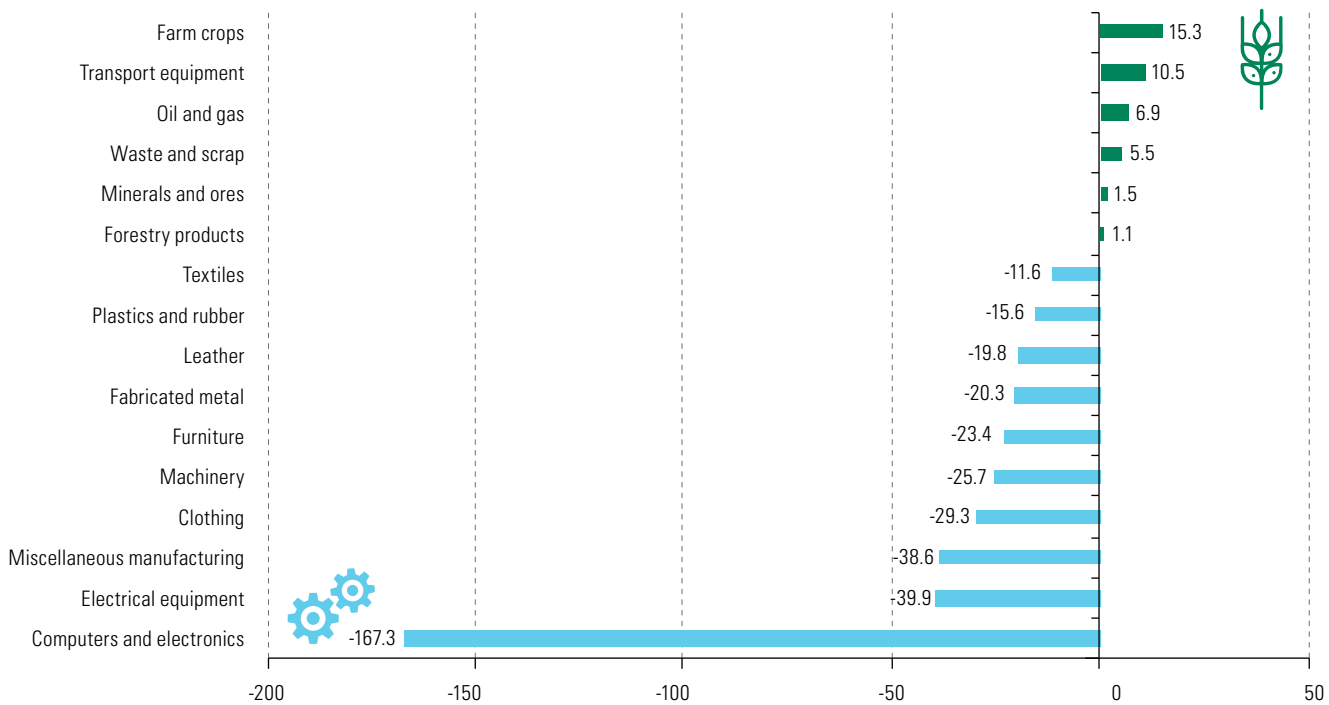
transport equipment, the United States runs surpluses with China only in sectors linked to natural resources. However, the United States also runs a growing surplus with China on its services trade balance; this rose from just over US$ 30 billion in 2014 to a little over US$ 40 billion in 2017 (United States Bureau of the Census, 2018).

Figure I.19
United States: goods trade with China, 2000–2017
(Billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of the United Nations International Trade Statistics Database (UN Comtrade).

Figure I.20
United States: goods trade balance with China by sector, 2017
(Billions of dollars)



Source: J. Bartash, "Why the U.S.-China trade deficit is so huge: Here's all the stuff America imports", 17 September 2018 [online] https://www.marketwatch.com/story/heres-all-the-stuff-the-us-imports-from-china-thats-causing-a-huge-trade-deficit-2018-03-23/print.

The large deficit with China has often been cited as the cause of the current trade tensions. However, competition for technological supremacy between the two countries is a more important factor (Akita, 2018; Atkinson, 2018). In fact, the tariff hikes applied by the United States to Chinese products in 2018 were the result of an investigation into China's policies and practices regarding technology transfer, intellectual property and innovation. The investigation, conducted between August 2017 and March 2018, concluded that China made use of a range of practices that were harmful to United States trade interests and constituted unfair competition. These included: (i) requirements that United States companies wishing to invest in various sectors in China must form joint ventures with local partners;[9] (ii) a number of —usually informal— mechanisms forcing or inducing the transfer of technology and intellectual property from United States companies to Chinese firms; and (iii) commercial cyberespionage practices.

According to the United States government, the above-mentioned practices are part of an ambitious industrial policy strategy, embodied in instruments such as the Made in China 2025 industrial plan launched in 2015. That strategy seeks to turn China into a global leader in state-of-the-art sectors, such as artificial intelligence, biotechnology, information technology, advanced materials, advanced manufacturing and aerospace technology, among others. China has set itself the target of reducing its dependency ratio on technologies developed elsewhere in the world in these sectors to less than 30%, by 2020 (USTR, 2018). These are precisely the industries that support the economic and technological leadership of the United States today.

Since the results of this investigation were released, the United States has raised tariffs on almost half of its imports from China and has strengthened controls on foreign investment from China to prevent the acquisition of key technologies (in particular those denominated "dual-use" goods, i.e. civil and military) (*South China Morning Post,* 2018). It also initiated a dispute settlement procedure at WTO, questioning the compatibility of China's various measures and practices with the Organization's intellectual property rules. For its part, China launched its own case before WTO, questioning the legality of tariff hikes in the United States.

The findings of the investigation are consistent with the critical vision that the United States has maintained for years regarding trade and industrial policy in China, which the United States now considers a "strategic competitor". This vision, which has intensified during the current Administration, has an undeniable geopolitical underpinning. This is evident in the national security strategy of the United States, issued in December 2017. Without expressly mentioning China, the strategy states that "For decades, the United States has allowed unfair trading practices to grow. Other countries have used dumping, discriminatory non-tariff barriers, forced technology transfers, non-economic capacity, industrial subsidies, and other support from governments and state-owned enterprises to gain economic advantage" (The White House, 2017, p. 19). It goes on to say that: "Every year, competitors such as China steal U.S. intellectual property valued at hundreds of billions of dollars" (The White House, 2017, p. 21).

Other industrialized economies share several of the concerns expressed by the United States regarding the "State capitalism" model prevailing in China (Rattner, 2018; *Financial Times* 2018). The European Union, Japan and the United States issued a joint ministerial statement in May 2018 in which they "reiterated their concern with the non-market-oriented policies of third countries" and "confirmed their shared view that no country should require or pressure technology transfer from foreign companies to domestic companies".[10] These three countries feel that the existing WTO agreements

[9] The sectors mentioned in point (i) include manufacturing of automobiles and commercial aircraft and basic and value added telecommunications services, among others (USTR, 2018, p. 26).

[10] See "Joint Statement on Trilateral Meeting of the Trade Ministers of the United States, Japan, and the European Union", Paris, 31 May 2018, [online] http://trade.ec.europa.eu/doclib/docs/2018/may/tradoc_156906.pdf. In parallel with its call to negotiate new multilateral rules, in June 2018 the European Union launched a dispute settlement procedure at WTO, questioning the legality of technology transfer practices used by China.

—negotiated in the early 1990s, before China's accession to the Organization in 2001— have limitations when it comes to addressing issues such as the distortions generated by industrial subsidies, the regulation of State enterprises and practices of forced technology transfer. They have accordingly agreed to press for new negotiations to update WTO rules in these areas (an initiative that will likely be resisted by China). In addition, statements by President Trump in August 2018 that raise the possibility of the United States withdrawing from WTO are partly explained by his perception that the institution is ineffective in bringing about a change in China's policies.

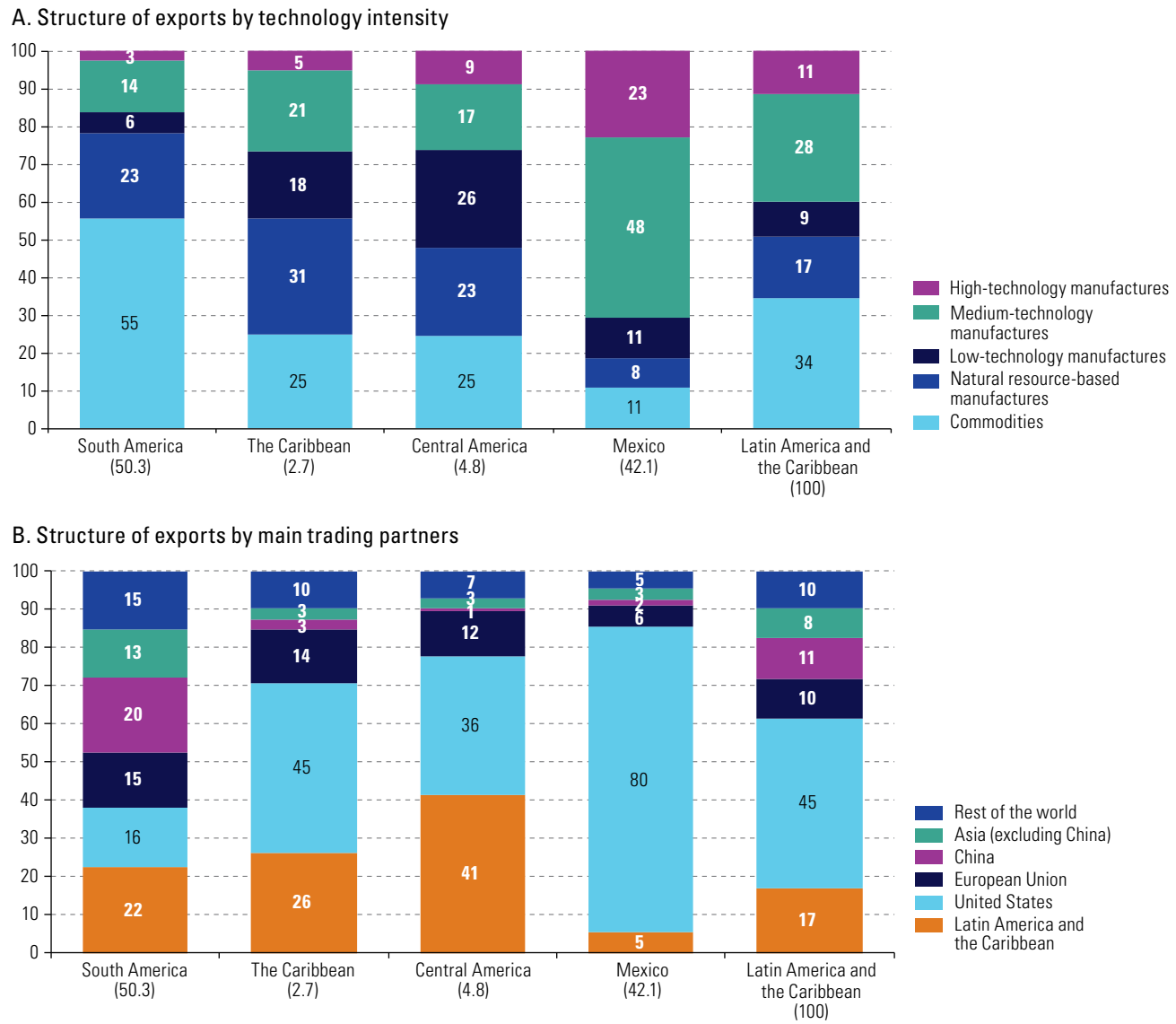
In short, the escalation of trade tensions among major global economic powers has effects that far exceed the matter of trade deficits. As argued by Rodrik (2018), the backdrop to this escalation is the discussion about the coexistence of different styles of development. Using access to its vast and dynamic market as a bargaining chip, China has been able to attract FDI and benefit from an active industrial policy to improve its position in global value chains (UNCTAD, 2018). This has enabled the country to become an industrial powerhouse and challenge the technological leadership of developed countries. The current trade tensions are, then, a reflection of a larger disagreement on what the "rules of the game" of trade and foreign investment should look like in the coming decades, when both will be drastically reshaped by the ongoing technological revolution and in particular by digitization.

The manner in which the current disagreement is resolved will largely determine the space available to developing countries, including those in Latin America and the Caribbean, to design and pursue trade, industrial and technology policies in the coming years. Latin America and the Caribbean badly needs such policy space to improve its international trade position, which has not changed significatively in the past few decades. On the contrary, expanding trade with China and the rest of Asia since 2000 has increased the region's commodity export concentration, which has heightened its dependence on the prices of these goods and thus tightens external constraints at times of low prices or tougher access to external financing. The pattern is different in Mexico and Central America, most of whose exports consist of manufactures going to the United States. However, these generally have little local value added built in and their competitiveness is based largely on low labour costs. Against this backdrop, the following section looks at recent trade dynamics and the external trade outlook for the region in 2018.

C. The region's exports have increased, but growth remained dependent on commodity prices

In addition to reflecting the level of economic activity in each country, the variation in the region's foreign trade is determined by the structure of the export and import baskets and by the external demand of its main trading partners. There are significant variations in the trade structures of the different subregions (see figure I.21). In aggregate terms, the export baskets of the South American and —albeit to a lesser extent— the Caribbean economies overall consist largely of commodities and natural-resource-based manufactures (78% and 56% of the total export value, respectively). Therefore, the changes in the prices of basic raw materials (oil, gas, agricultural and livestock products, minerals and metals) and in the external demand of the main buyers of those products —including China and the rest of Asia— has a significant impact on export performance. Meanwhile, manufactures are the main component of the export baskets of Mexico and Central America. Therefore, two of the main determining factors of their export performance are the capacity of the industry to expand and demand from the United States, which is the main destination for Mexican exports and the second largest for Central America.

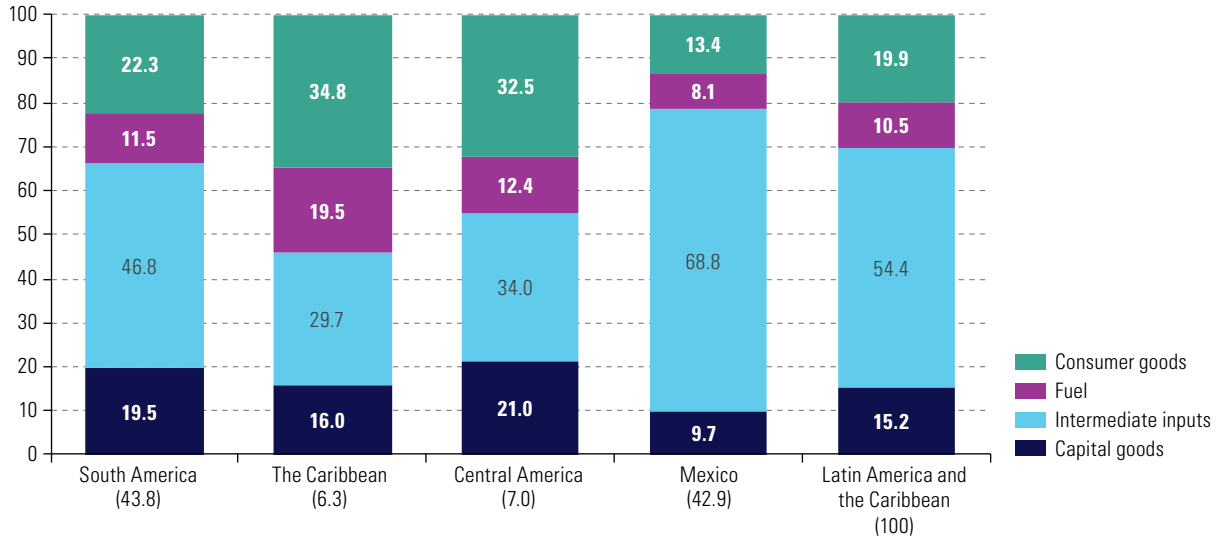
Figure I.21
Latin America and the Caribbean, Mexico and subregions: export pattern by technology intensity and trading partners, 2017[a]
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).
[a] The numbers in brackets indicate the share of each subregion or country in the region's total exports.

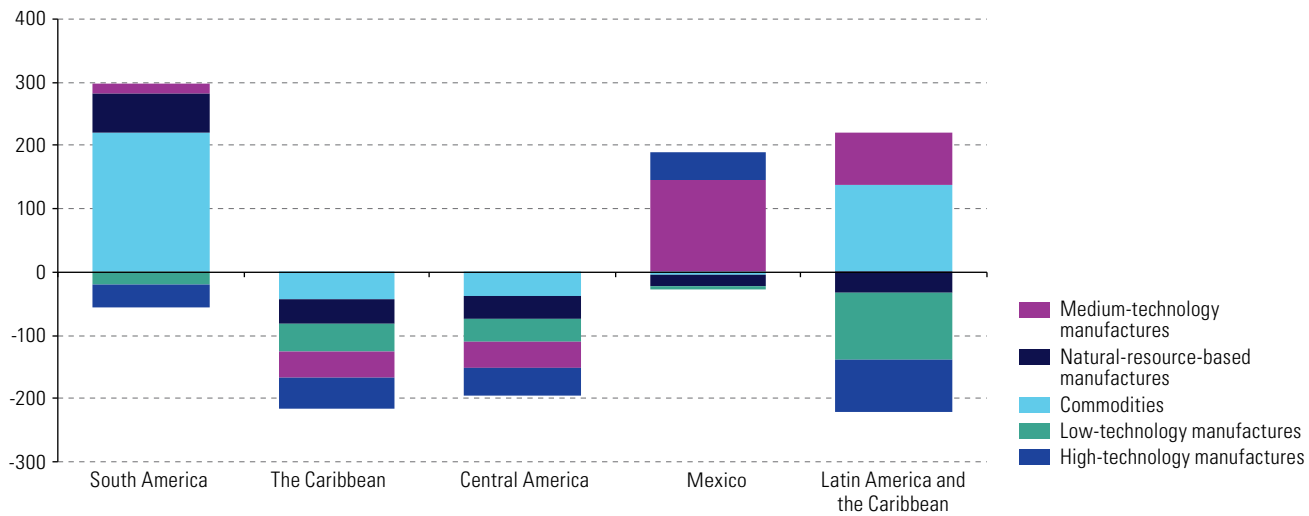
With regard to imports, the better or weaker performance is a direct reflection of the level of each country's economic activity, and therefore of their needs for energy, intermediate inputs, capital goods and consumer goods. These needs also vary significantly among the different subregions, given their specific resources and productive structures (see figure I.22). The trade balances of each subregion are also a reflection of the productive structures. For example, South America has a notable commodities surplus, while Mexico's surplus is primarily in medium-technology manufactures. Owing to the smaller size of their economies, the Caribbean and Central America have a deficit in all the technology intensity categories (see figure I.23).

Figure I.22
Latin America and the Caribbean, Mexico and subregions: import pattern by broad economic category, 2017[a]
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).
[a] The numbers in brackets indicate the share of each subregion or country in the region's total imports.

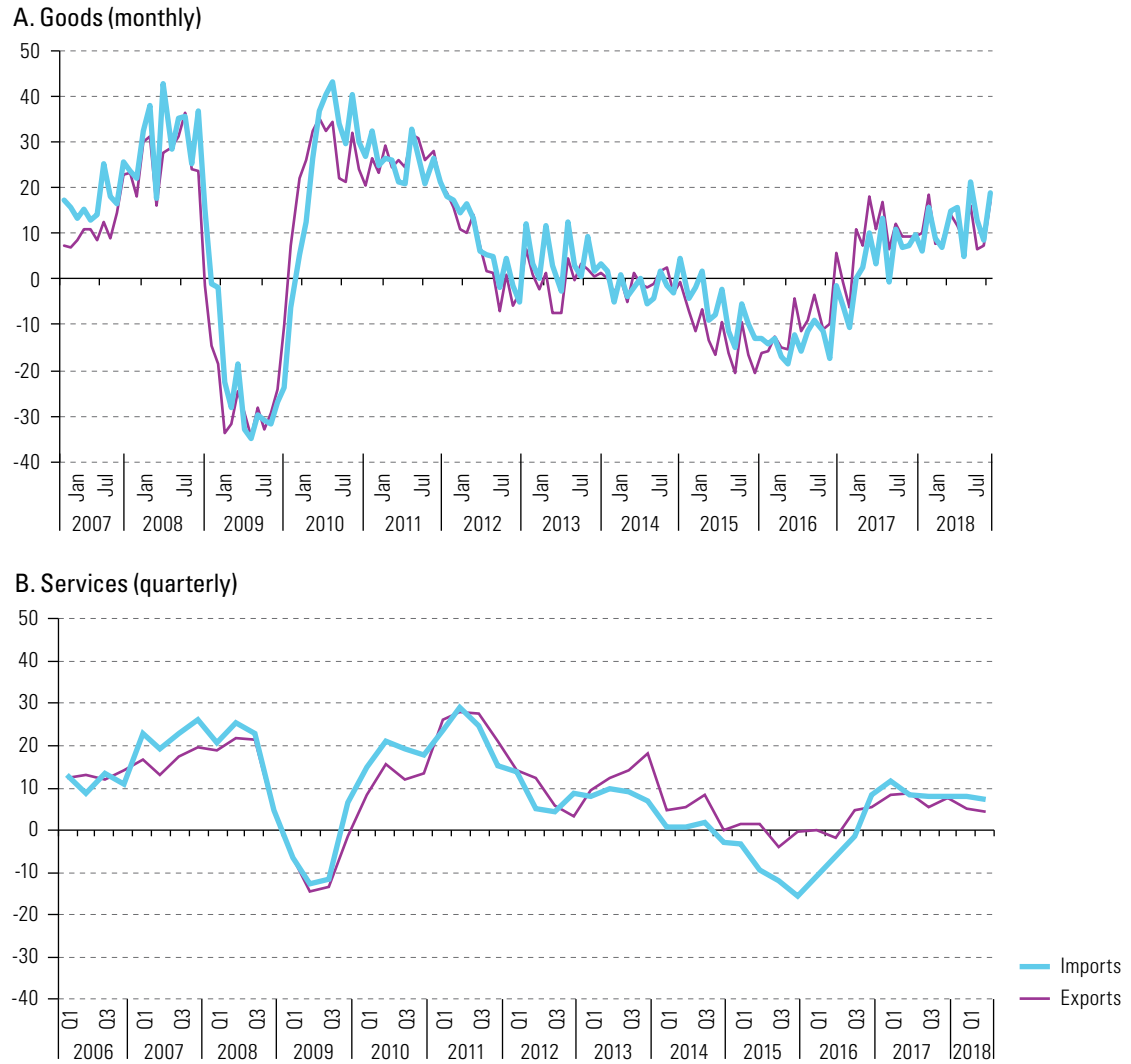
Figure I.23
Latin America and the Caribbean, Mexico and subregions: trade balances and technology intensity category, 2017
(Billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).

The recovery of the region's foreign trade (measured in terms of value) that began in the last quarter of 2016 has continued in 2018, for trade in both goods and services (see figure I.24). In the first half of 2018, merchandise exports and imports grew by 10.4% and 12.2% in value terms, respectively, outpacing the equivalent flows in the United States, Japan and other Asian countries (excluding China). Nonetheless, the bulk of the growth of regional foreign trade in that period —in exports particularly— is explained by higher prices. In volume terms, exports grew by just 0.9%, the slowest growth rate of any region of the world (see table I.1).

Figure I.24
Latin America and the Caribbean: year-on-year variation in the value of trade in goods and services, 2006–2018
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Trade Organization (WTO) and official data from the countries' central banks, customs offices and national institutes of statistics.

Table I.1
World, regions and selected countries: variation in merchandise trade, January–June 2018 relative to January–June 2017
(Percentages)

	Exports			Imports		
	Volume	Price	Valor	Volume	Price	Value
World	**3.2**	**9.6**	**12.8**	**4.7**	**9.5**	**14.2**
United States	5.4	4.2	9.6	4.7	4.0	8.7
European Union	2.2	13.6	15.8	1.1	14.9	16.1
Asia and the Pacific	4.3	6.4	10.7	2.4	8.3	10.7
Japan	4.5	5.4	9.8	2.7	8.5	11.1
China	6.0	6.7	12.7	11.0	9.0	19.9
Rest of Asia	3.1	6.5	9.5	-1.8	7.9	6.1
Latin America and the Caribbean	**0.9**	**9.5**	**10.4**	**5.5**	**6.7**	**12.2**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Trade Organization (WTO) and official data from the countries' central banks, customs offices and national institutes of statistics.

In the first six months of 2018, the value of exports from the mining and petroleum sectors grew twice as fast as the region's total merchandise shipments, while exports of manufactures, and especially those of agricultural crop and livestock products, increased at below-average rates (see table I.2). The transport and travel sectors boosted services exports. On the import side, there were double-digit expansions in all merchandise categories, with the strongest gains posted by fuels and capital goods.

Table I.2
Latin America and the Caribbean: variation in the value of trade in goods and services, first half of 2016, 2017 and 2018
(Percentages with respect to the year-earlier period)

	January–June 2016	January–June 2017	January–June 2018
Exports of goods and services	**-7.1**	**12.6**	**9.2**
Goods	**-8.3**	**13.3**	**10.4**
Agricultural and agricultural products	1.9	3.3	1.1
Mining and oil	-28.8	36.0	20.6
Manufactures	-3.3	9.8	9.1
Services[a]	**-1.0**	**8.6**	**3.4**
Transport	-2.4	10.2	5.9
Travels	5.9	8.1	3.4
Other services	-8.3	8.5	1.9
Imports of goods and services	**-12.5**	**8.3**	**11.3**
Goods	**-13.2**	**7.9**	**12.2**
Capital goods	-12.0	-2.6	14.1
Intermediate inputs	-10.6	7.3	10.0
Consumer goods	-11.2	8.7	11.6
Fuels	-32.1	31.1	22.6
Services[a]	**-8.6**	**9.9**	**6.9**
Transport	-12.4	10.0	9.2
Travel	-7.5	15.4	7.8
Other services	-6.7	5.9	4.6

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official data from the countries' central banks, customs offices and national institutes of statistics.

[a] For trade in services, the variations were calculated from complete balance of payments data for the first half of 2018 for Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Mexico and Peru. In the cases of Bolivia (Plurinational State of) and Nicaragua data were available for the first quarter of 2018, so estimates were made for the second quarter.

Growth in regional export values in 2018 was chiefly a reflection of higher prices for its commodity exports. In particular, prices of oil and hydrocarbon products posted new highs in September 2018 (over US$ 80 per barrel of crude) since the last collapse between 2015 and 2016. Moreover, China's sustained demand for minerals and metals has helped keep prices rising (see chapter II). Coal and gas prices also trended up through August and are expected to remain at high levels until the end of 2018, as will the prices of cocoa and fishery products.

Sugar and coffee are among the few commodities exported by the region for which prices have weakened. Global sugar production expanded by nearly 10% in 2018, while demand only grew by 1.4% (International Sugar Organization, 2018). In the case of coffee, overproduction caused the price to drop to a 57-month low in August (International Coffee Organization, 2018). Price increases are projected in 2018 for 19 of the 25 main commodities exported by the region in 2017. As a result, the composite price index of these 25 products is expected to rise by 5.0% (see table I.3).

Table I.3
Latin America and the Caribbean: year-on-year variation in the prices of the main export commodities, January to September 2017 and 2018 and projection for 2018
(Percentages)

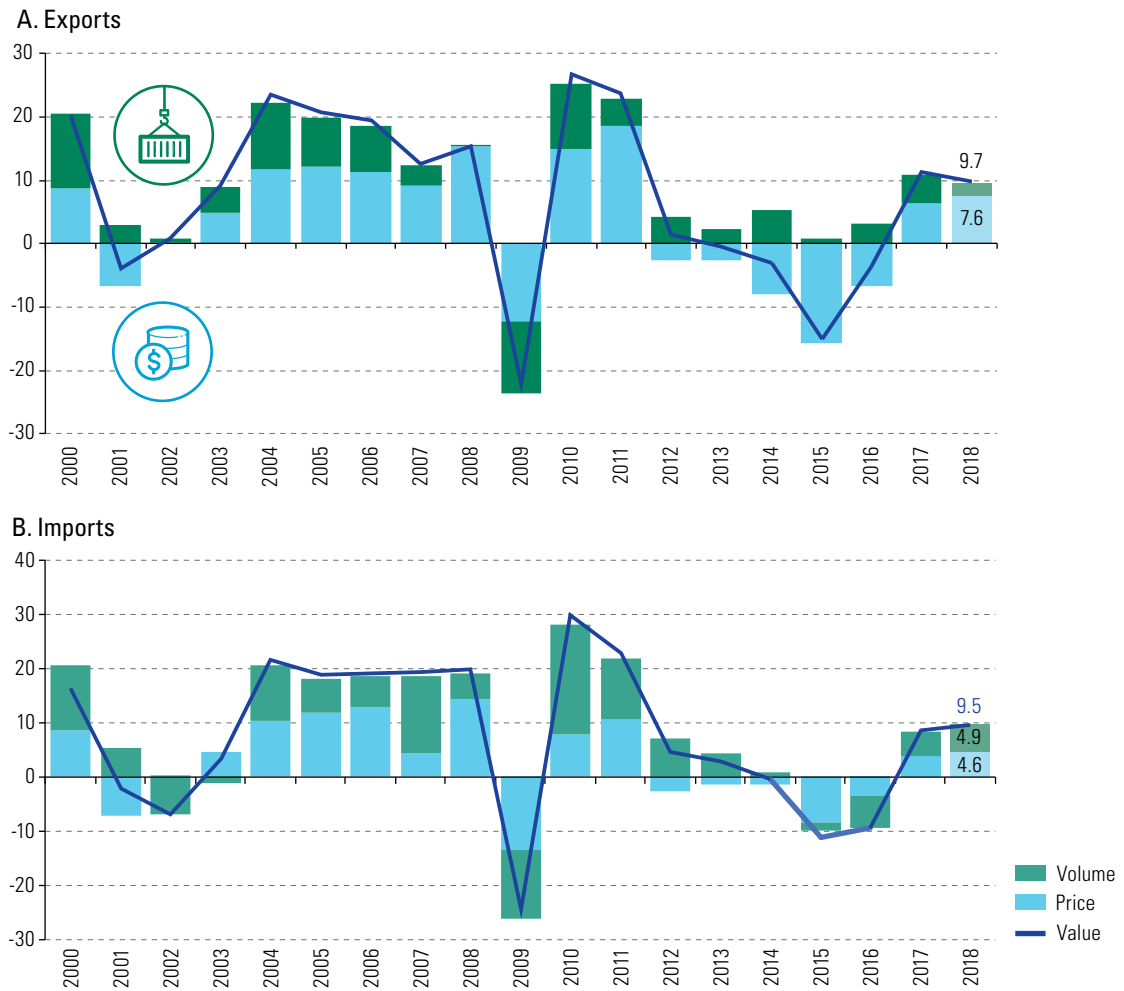
Product	Share in exports[a]	January-September 2017	January- September 2018	Projection 2018[b]
Crude oil	9.3	24.8	37.0	39.6
Nickel	0.1	9.0	35.4	32.9
Coal	0.5	49.3	26.7	23.4
Oil derivatives	2.0	12.4	6.8	21.0
Cacao	0.2	-33.1	15.3	12.5
Wheat	0.3	5.6	15.2	12.4
Fish meal	1.0	-11.0	3.0	11.5
Bananas	2.5	5.1	15.6	10.9
Aluminium	0.5	22.6	11.6	10.0
Copper	2.5	26.0	11.1	6.9
Rice	0.1	0.6	6.9	6.0
Other minerals and metals	10.0	24.2	4.2	5.6
Maize	1.0	-3.1	5.4	5.0
Soybean	3.4	-0.7	4.3	5.0
Fish	1.0	9.8	-0.6	1.8
Tin	0.1	18.7	1.5	1.0
Gold	1.0	-0.6	2.3	0.9
Zinc	0.2	42.7	8.6	0.2
Beef	2.2	8.5	-3.2	-2.5
Natural gas	1.0	31.8	-4.6	-2.5
Iron	1.7	50.2	-5.3	-4.7
Shrimp and crustaceans	0.7	27.3	-9.3	-6.0
Soybean oil	0.6	-4.2	-5.3	-8.7
Coffee	1.2	5.9	-12.1	-13.6
Sugar	1.7	-4.6	-24.7	-24.6
Composite index[c]	**44.8**	**7.4**	**4.5**	**5.0**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations Conference on Trade and Development (UNCTAD), World Bank, The Economist Intelligence Unit, Blomberg and International Monetary Fund (IMF).
[a] Calculated from (symmetric) mirror statistics on all of the region's trade partners.
[b] The figures for 2018 represent a synthesis of the various projections made by the institutions referenced in the source.
[c] Composite index of the 25 products or product groups mentioned.

Based on the data available on merchandise trade between January and August 2018, and price trends among the major export commodities, a 9.7% increase in the value of regional merchandise exports is projected in 2018. This increase combines a 7.6% rise in prices and a 2.1% volume expansion.

As a result, the region's export value will have been recovering for two straight years, following the sharp fall registered between 2012 and 2016 (see figure I.25). Nonetheless, the volume of regional exports in 2018 is expected to grow by less than half of those of developing economies as a whole, for which an expansion of 4.6% is projected (WTO, 2018b). Regional merchandise import values will also rise in 2018 for the second consecutive year, with a projected expansion similar to that of exports (9.5%). However, unlike exports, imports are expected to grow more in volume terms (4.9%) than in price (4.6%).

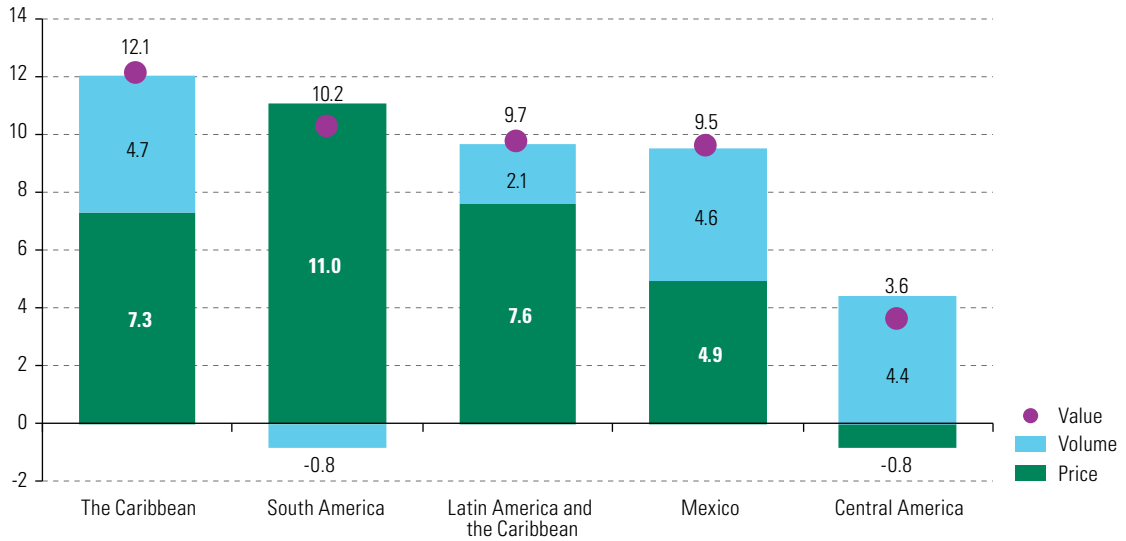
Figure I.25
Latin America and the Caribbean: annual variation in merchandise trade, by volume, price and value, 2000–2018[a]
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official data from the countries' central banks, customs offices and national institutes of statistics.
[a] The figures for 2018 are projections.

The largest increases in value exported in 2018 are expected to occur in the Caribbean and in South America (growth of 12% and 10%, respectively). In both cases, this is mainly explained by sharp price hikes, especially among the oil and mineral exporting countries. Nonetheless, while Caribbean exports are also expected to rise in volume terms (4.7%), in South America a drop of 0.8% is forecast (see figure I.26). The latter is explained by projected reductions in export volume in five of the subregion's countries (Argentina, the Bolivarian Republic of Venezuela, Colombia, Ecuador and Uruguay (see table I.4).

Figure I.26
Latin America and the Caribbean, Mexico and subregions: projected variation in goods exports, by volume, price and value, 2018
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official data from the countries' central banks, customs offices and national institutes of statistics.

Table I.4
Latin America and the Caribbean (groupings and selected countries): projected variation in merchandise trade, by price, volume and value, 2018
(Percentages)

Country/Region/Grouping	Exports			Imports		
	Price	Volume	Value	Price	Volume	Value
Latin America and the Caribbean	**7.6**	**2.1**	**9.7**	**4.6**	**4.9**	**9.5**
Latin America	**8.0**	**1.6**	**9.6**	**4.6**	**4.9**	**9.5**
South America	**11.0**	**-0.8**	**10.2**	**5.2**	**5.9**	**11.0**
Southern Common Market (MERCOSUR)	**11.3**	**-2.5**	**8.8**	**4.7**	**6.8**	**11.5**
Argentina	7.0	-1.3	5.7	4.0	-2.7	1.3
Brazil	9.0	3.5	12.5	5.0	16.9	21.9
Paraguay	6.0	0.5	6.5	4.9	0.4	5.3
Uruguay	7.0	-9.1	-2.1	5.1	-0.6	4.5
Venezuela (Bolivarian Republic of)	33.0	-37.5	-4.5	5.2	-32.2	-27.0
Andean Community	**11.2**	**1.1**	**12.3**	**5.6**	**4.4**	**10.0**
Bolivia (Plurinational State of)	11.0	5.6	16.6	6.8	-4.9	1.9
Colombia	13.0	-2.1	10.9	5.0	4.5	9.5
Ecuador	15.0	-1.3	13.7	6.5	7.8	14.3
Peru	8.0	4.2	12.2	5.5	4.5	10.0
Chile	9.0	4.3	13.3	6.1	5.0	11.1
Central America	**-0.8**	**4.4**	**3.6**	**5.2**	**0.5**	**5.7**
Costa Rica	-1.0	9.9	8.9	4.5	1.1	5.6
El Salvador	0.7	6.1	6.8	6.0	5.2	11.2
Guatemala	-1.9	1.2	-0.7	4.5	2.9	7.4
Honduras	-2.0	4.4	2.4	5.6	2.8	8.4
Nicaragua	1.4	-6.8	-5.4	4.9	-17.4	-12.5
Panama	7.8	-4.7	3.1	5.9	-0.5	5.4
Mexico	4.9	4.6	9.5	3.7	4.8	8.5
Dominican Republic	3.0	7.4	10.4	6.1	6.3	12.4
Cuba	-6.3	-5.8	-12.1	6.5	-4.5	2.0
Caribbean Community (CARICOM)	**11.2**	**4.3**	**15.5**	**7.6**	**1.0**	**8.5**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official data from the countries' central banks, customs offices and national institutes of statistics.

The largest contraction in volume exported in 2018 is projected to occur in the Bolivarian Republic of Venezuela (-38%), since output by the State oil company Petróleos de Venezuela (PDVSA) has fallen to 1.7 million barrels per day (the lowest level since 1989). Colombia and Ecuador saw reductions of 12% and 5%, respectively, in fuel exports in the first seven months of 2018. In Uruguay and Argentina, agricultural export volumes contracted by 17% and 10%, respectively, with even steeper falls in soybean exports (of about 50% and 60%, respectively) as a result of the severe drought that has affected them since 2017 (Central Bank of Uruguay, 2018; INDEC, 2018). In Brazil, export volumes flatlined until the end of August, although exports of semi-manufactured products (such as sugar, iron ore and soybean oil) were down by 10% (SECEX, 2018).

In Mexico, export expansion of 9.5% in 2018 reflects price and volume performance in similar proportions. In Central America, stronger exports are due entirely to larger export volumes, since the prices of the subregion's export basket in fact deteriorated, with steep falls in prices for sugar cane (-25%), coffee (-14%) and palm oil (-9%). This has particularly impacted exports from Honduras, Nicaragua and Guatemala, where these products together represent large shares of the total export basket (30%, 16% and 15%, respectively). In 2018, maquila and free zone activity will cushion the negative shock of lower prices in the agro-export sector. Between January and June 2018, exports from the maquila and free zones sectors in Central America and the Dominican Republic were 5% higher in value terms than in the year-earlier period (exceeding the average growth of total exports in that group of countries). Mexico and Central America are benefiting from the buoyancy of rising demand in the United States, which in 2017 absorbed 80% of exports from Mexico and 36% from Central America.

In the Caribbean, a group of six countries (Trinidad and Tobago, Antigua and Barbuda, Suriname, the Bahamas, the Dominican Republic and Haiti) are anticipated to post gains of between 10% and 21% in export values (see table I.5). In Trinidad and Tobago and Suriname, the main factor behind the projected export growth is the rise in the prices of oil, gas and petrochemical products, which jointly account for 86% and 30%, respectively, of export value. In the Dominican Republic, the projected increase in exports is explained largely by mining, in which export volumes grew at double-digit rates in the first quarter of the year (Central Bank of the Dominican Republic, 2018). Exports of manufactured goods from free zones also grew in value terms by 11% in the first six months of the year (Polanco, 2018). In Haiti, the main reason for the projected expansion is the extension until 2025 of the tariff preference programme extended by the United States, which allows Haiti's textile products (80% of its exports) to enter the United States tariff-free.

Cuba, Belize and Saint Lucia are the only Caribbean economies in which exports are forecast to decline. This reflects the fall in the price of sugar, which represents around 30% of the total exports of Cuba and Belize, and a steep fall of over 20% in exports of beverages, tobacco and chemicals from Saint Lucia in 2018 (Eastern Caribbean Central Bank, 2018). The small economies that comprise the Organization of Eastern Caribbean States (OECS) are expected to see their exports recover in 2018, after being crippled by Hurricanes Irma and Maria in 2017.

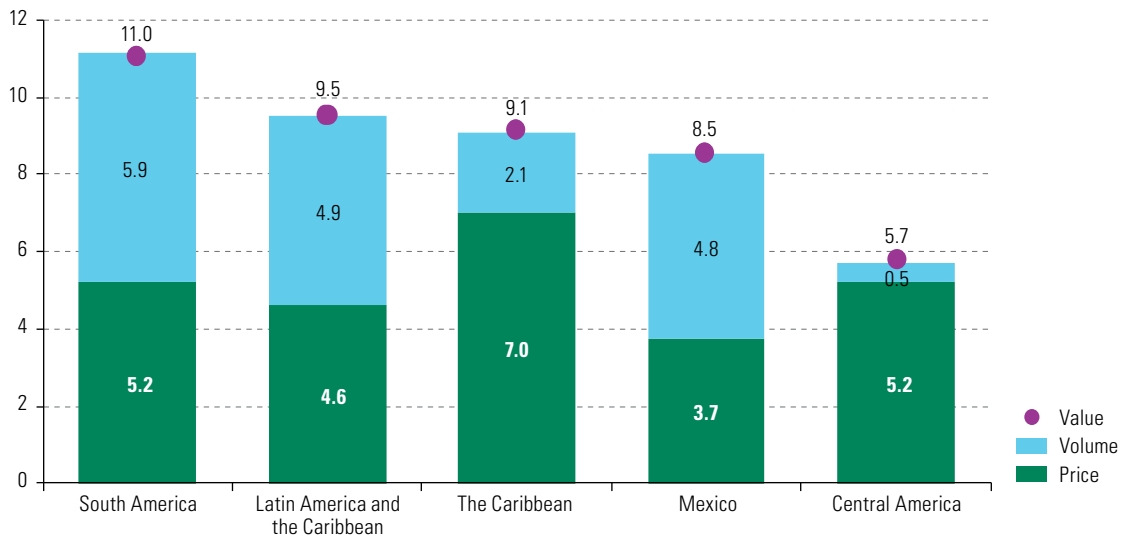
At the regional level in 2018, import volumes are expected to increase by more than prices (4.9% vs. 4.6%), mainly owing to volume expansions in the cases of Mexico and South America (see figure I.27), where until August, there have been widespread increases in volumes of capital goods and intermediate inputs, mainly parts and accessories, vehicles and machinery. In South America, capital goods imports are expected to outpace consumer goods in 2018, as happened in the first half of the year (growth rates of 17% and 10%, respectively).

Table I.5
The Caribbean: projected variation in merchandise trade, by price, volume and value, 2018
(Percentages)

	Exports			Imports		
	Price	Volume	Value	Price	Volume	Value
The Caribbean	**7.3**	**4.7**	**12.1**	**7.0**	**2.1**	**9.1**
Caribbean Community (CARICOM)	**11.2**	**4.3**	**15.5**	**7.6**	**1.0**	**8.5**
Bahamas	8.0	6.5	14.5	11.0	-9.0	2.0
Barbados	6.3	1.4	7.7	6.2	-0.2	6.0
Belize	-6.5	-4.5	-11.0	5.8	5.7	11.5
Guyana	-0.5	6.0	5.5	6.5	1.9	8.4
Haiti	2.0	7.7	9.7	3.4	4.1	7.5
Jamaica	6.0	0.1	6.1	8.5	-1.2	7.3
Suriname	10.0	3.9	13.9	4.5	12.2	16.7
Trinidad and Tobago	16.0	4.7	20.7	11.0	1.1	12.1
Organization of Eastern Caribbean States (OECS)	**3.0**	**0.3**	**3.3**	**5.3**	**2.5**	**7.8**
Antigua and Barbuda	3.7	15.3	19.0	5.7	5.8	11.5
Dominica	4.0	-2.5	1.5	6.2	-0.5	5.7
Grenada	4.1	3.9	8.0	4.0	5.4	9.4
Saint Kitts and Nevis	2.0	2.2	4.2	3.3	1.2	4.5
Saint Lucia	2.2	-7.0	-4.8	6.8	-5.0	1.8
Saint Vincent and the Grenadines	5.2	-1.5	3.7	4.5	9.8	14.3
Cuba	**-6.3**	**-5.8**	**-12.1**	**6.5**	**-4.5**	**2.0**
Dominican Republic	**3.0**	**7.4**	**10.4**	**6.1**	**6.3**	**12.4**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official data from the countries' central banks, customs offices and national institutes of statistics.

Figure I.27
Latin America and the Caribbean, Mexico and subregions: projected variation in goods imports, by volume, price and value, 2018
(Percentages)



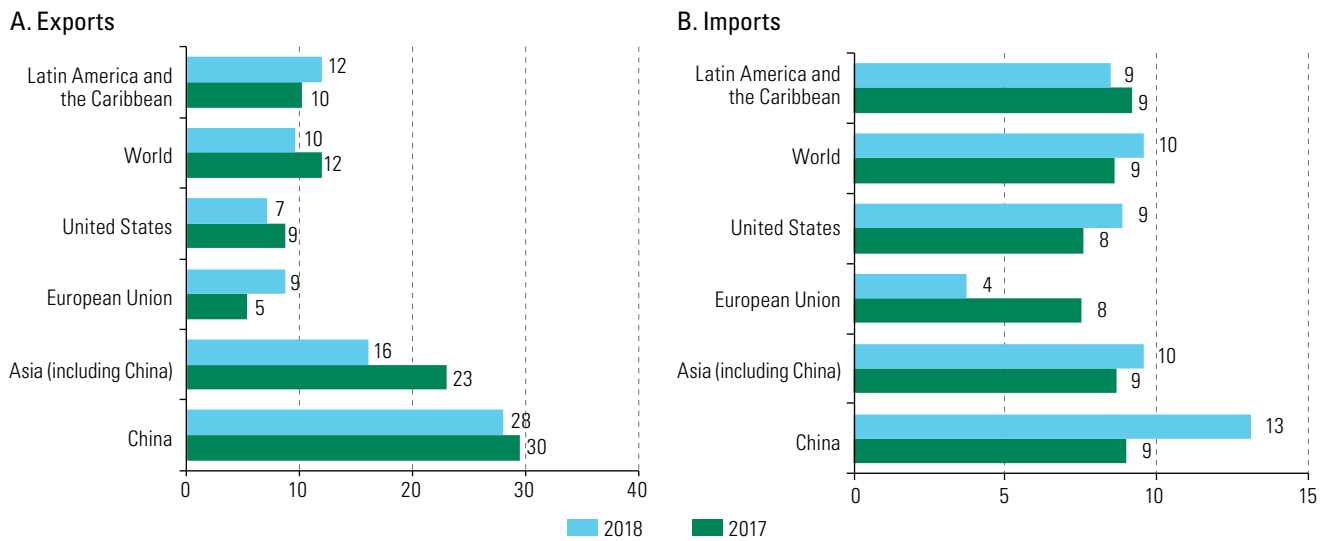
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official data from the countries' central banks, customs offices and national institutes of statistics.

In Central America, the most buoyant imports in 2018 will be the fuels and intermediate goods required for domestic industry, while imports of consumer and capital goods are expected to slow, owing largely to economic contraction in Nicaragua. The projected 5.7% increase in the value of Central American imports is explained almost entirely by the rise in the price of the import basket, which is directly affected by the higher prices of gasoline, kerosene and diesel. As a result, the Central American countries —as net fuel importers— will suffer a negative terms-of-trade impact estimated at -5.7%, since a projected fall of 0.8% in export prices will compound the rise in import prices.

Among the Caribbean economies, import growth is being driven by price hikes in gasoline and other fuels. The value of Caribbean imports (excluding those of Trinidad and Tobago) is projected to grow by 8% in 2018, owing mainly to the 8.9% rise in import prices. This will represent a negative terms-of-trade shock of -5.1%.

Considering the region's main trading partners, exports of goods to China are set to grow by most in 2018, with a projected 28% increase in value terms, marking a second consecutive year of solid recovery (see figure I.28). Exports to China from Argentina and Uruguay decreased in value terms in the first half of 2018, when exported volumes shrank because of the drought that affected both countries. However, the revival of demand for minerals and metals in China and the rest of Asia offset the reduction in agricultural exports.

Figure I.28
Latin America and the Caribbean, world and selected regions: variation in the value of merchandise trade by origin and destination, 2017 and 2018[a]
(Percentages)

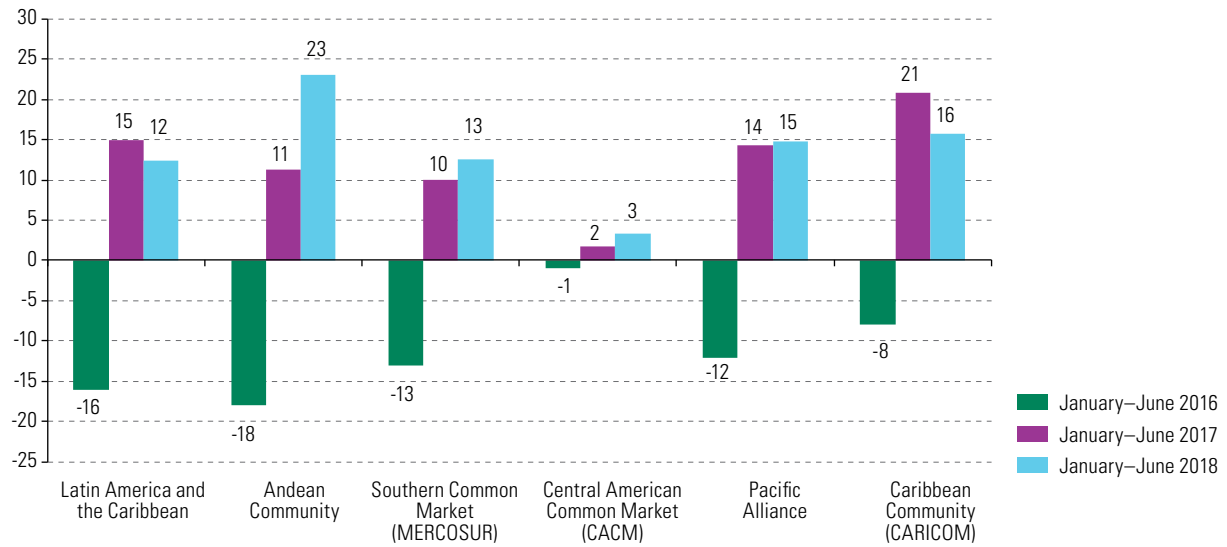


Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official data from the countries' central banks, customs offices and national institutes of statistics.
[a] The figures for 2018 are estimates.

The value of exports to the European Union in the first six months posted increases above the regional average in the cases of Brazil, Mexico and Uruguay. Nonetheless, agricultural and agribusiness exports to that market plummeted —especially those from Central America and the Caribbean— owing to reduced exports of coffee, sugar and other products. For the year overall, exports to the European Union are expected to rise by 9% in value. Exports to the United States are expected to expand by 7% in 2018, just below their 2017 growth rates. On the import side, above-average growth rates are projected for imports from China and below-average rates for those from the European Union.

In the first half of 2018, intraregional exports grew by 12% in value relative to the year-earlier period, with the greatest increases occurring in the Andean Community (23%) and the smallest in the Central American Common Market (3%) (see figure I.29). Growth of intraregional exports will remain slack within Central America in the second half of the year, partly owing to tensions in Nicaragua. The largest gains in intraregional flows in the first half of 2018 occurred in exports of agricultural and agro-industrial products, automobiles, metals and metal products, petroleum and mining, and non-metallic minerals, and mainly within the Andean Community and MERCOSUR (see table I.6).

Figure I.29
Latin America and the Caribbean: variation in intraregional exports by integration mechanism, January to June 2016, 2017 and 2018 with respect to the year-earlier period
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official data from the countries' central banks and information from the Secretariats of the region's various integration schemes.

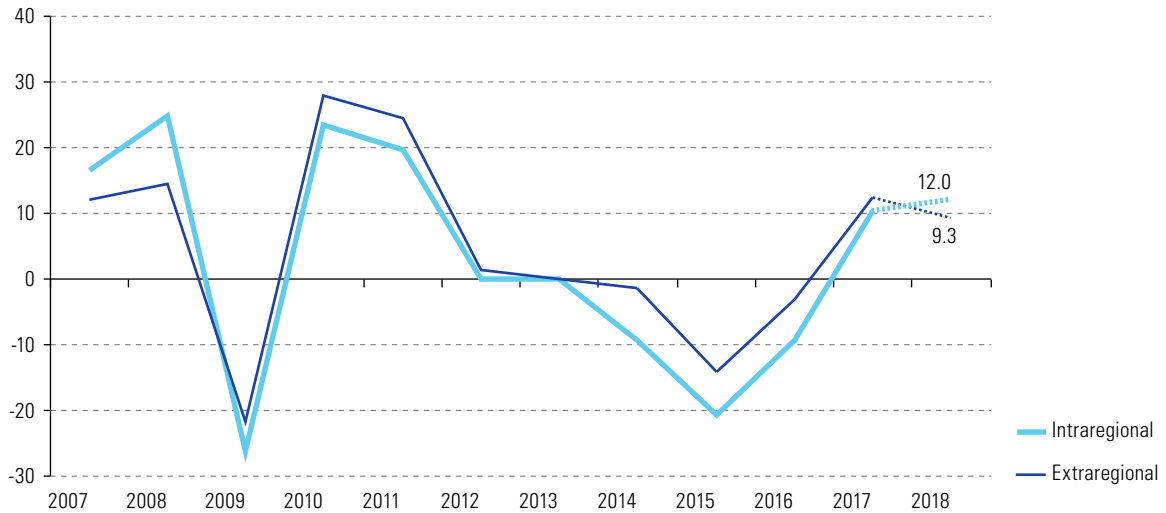
Table I.6
Latin America and the Caribbean: variation in intraregional and intra-subregional exports of goods, by sector and integration mechanism, January to June 2018 relative to the year-earlier period
(Percentages)

	Southern Common Market (MERCOSUR)	Andean Community	Pacific Alliance	Central American Common Market	Caribbean Community (CARICOM)	Latin America and the Caribbean
All products	**12.6**	**23.1**	**14.8**	**3.4**	**15.7**	**12.4**
Agriculture, hunting and fishing	66.2	19.3	4.1	4.9	-3.9	32.2
Oil and mining	-10.6	42.8	50.1	-32.3	78.2	16.2
Food, beverages and tobacco	11.0	22.3	-0.2	3.3	-7.5	8.1
Wood, pulp and paper	7.6	15.6	4.6	3.9	29.0	8.0
Textiles, clothing and footwear	-5.9	3.9	0.3	8.2	38.8	4.1
Chemistry and pharmacy	-7.1	13.1	10.8	1.6	-4.4	6.2
Rubber and plastic	5.2	12.2	6.0	-4.5	0.7	2.4
Non-metallic minerals	4.5	-3.0	6.4	-4.6	35.5	14.6
Machinery and equipment	14.4	12.4	27.0	18.7	-40.6	18.6
Metals and derivative products	1.9	8.8	2.9	6.5	2.9	5.8
Automotive	14.2	160.4	30.5	0.7	9.0	18.7
Other manufactures	2.7	23.4	2.5	-1.9	5.6	-5.3

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official data from the countries' central banks and information from the Secretariats of the region's various integration schemes.

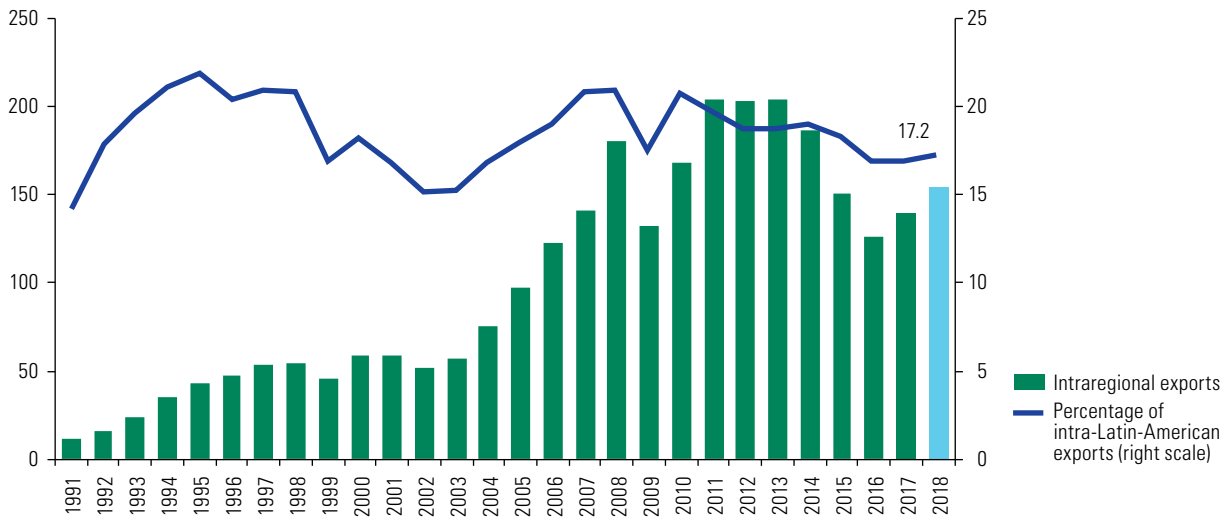
For the full year, an 12% expansion in intraregional exports is projected, three percentage points above the projection for exports to the rest of the world (see figure I.30). The expansion of intraregional trade will be led by natural-resource-based manufactures (hydrocarbon products, copper, paper and paperboard) and low- and medium-technology manufactures (especially products of the automobile and iron and steel industries). The intraregional trade index —as measured by exports— will be slightly higher than its 2017 level, at 17.2% (see figure I.31).

Figure I.30
Latin America and the Caribbean: annual variation in the value of intraregional and extraregional exports, 2007–2018[a]
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official data from the countries' central banks, customs offices and national institutes of statistics.
[a] The figures for 2018 are estimates.

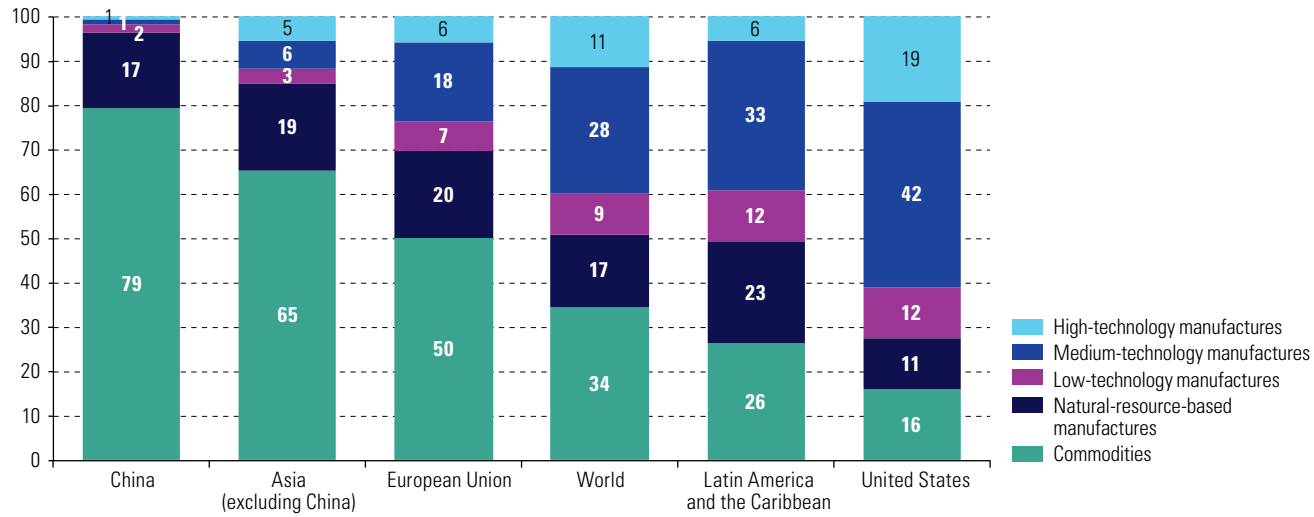
Figure I.31
Latin America and the Caribbean: intraregional goods exports, 1991–2018[a]
(Billions of dollars and percentages of exports to the world)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official data from the countries' central banks, customs offices and national institutes of statistics.
[a] The figures for 2018 are estimates.

The fastest-growing destinations for regional exports over the past two years (China and the rest of Asia) are precisely those that demand larger proportions of commodities and natural-resource-based manufactures. This has contributed to deepening the primary export specialization of the region, especially in South America. Conversely, low-, medium and high-tech manufacturing products represent a much larger share in intraregional trade and in exports to the United States (see figure I.32).

Figure I.32
Latin America and the Caribbean: composition of goods exports, by destination and technology intensity, 2017
(Percentages)

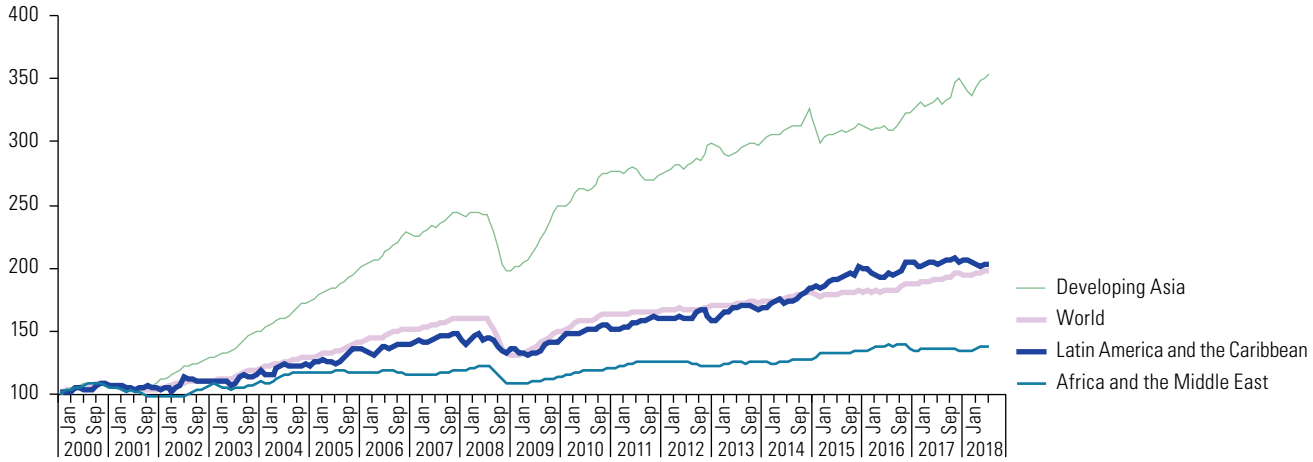


Source: Economic Commission for Latin America and the Caribbean (ECLAC).

In short, the export performance of the region in 2018 showed clear continuity with its historical patterns. The higher export value is mainly a result of higher prices for commodities, added —in the cases of Mexico and Central America— to stronger demand in the United States. The heavy weight of raw materials in the region's export basket leaves the region highly vulnerable to fluctuations in the prices of these products and, thus, to external restraints, especially at times like the present, when international financing is expensive. The region's export specialization, based on static comparative advantages (abundance of raw materials and low wages), has led to poor export growth during this century. In effect, the volume of regional exports has doubled since 2000, compared to the developing Asian economies, whose export volumes have multiplied by a factor of 3.5.

Regional integration is essential to break the inertia, diversify exports and develop a more knowledge-intensive export basket. This is because of the high industrial content of intraregional trade, as well as its crucial role for export SMEs. In fact, intraregional trade has major —largely untapped— potential as an agent of structural change. The need to step up efforts to move towards an integrated regional market is thus all the more urgent in the context of slowing growth, net capital outflows and the mounting protectionism facing the region, which will likely worsen in 2019.

Figure I.33
World and selected regions: volume of goods exports, January 2000–July 2018
(Index: January 2000=100)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Netherlands Bureau of Economic Policy Analysis (CPB), World Trade Monitor.

D. Possible impacts of trade tensions for the region

In 2018, the United States imposed a number of trade restrictions, and these have elicited retaliatory measures from the trade partners affected. In March, it applied tariff surcharges on imports of aluminium and steel from all origins, claiming national security reasons.[11] Then, between June and September, the United States imposed tariff surcharges on about US$ 250 billion of a variety of Chinese products, in response to alleged unfair practices in that country. China then reacted by imposing surcharges on US$ 110 billion of United States products (see table I.7). As a result, the restrictions introduced by the two parties now cover 50% of United States imports of goods from China in 2017 and 85% of their exports to China in the same year.

Trade restrictions in the United States could increase in the coming months. Firstly, the current Administration has signalled its readiness to impose tariff surcharges on all of its imports from China unless that country agrees to change the practices being objected to. Secondly, it has threatened to impose a 25% surcharge on automobile imports from all origins, invoking national security reasons. The latter decision will depend on the results of an ongoing investigation by the Department of Commerce.

The current surcharges applied by the United States have pushed up its average effective tariff, from 1.5% in 2017 to around 3.6% at present. Although the almost continuous downward trend of the last 50 years has been broken, the average level of tariff protection in the United States today is much lower than the 19.8% peak recorded in 1933 following the passing of the 1930 Smooth Hawley Tariff Act (see figure I.34). This legislation, which raised tariffs on a large number of imported products to alleviate the effects of the Great Depression, led to the collapse of import volumes and the adoption of reprisal measures by the affected countries. This triggered a general contraction in world trade and aggravated the economic crisis (Irwin, 1998; Eichengreen, 1986).

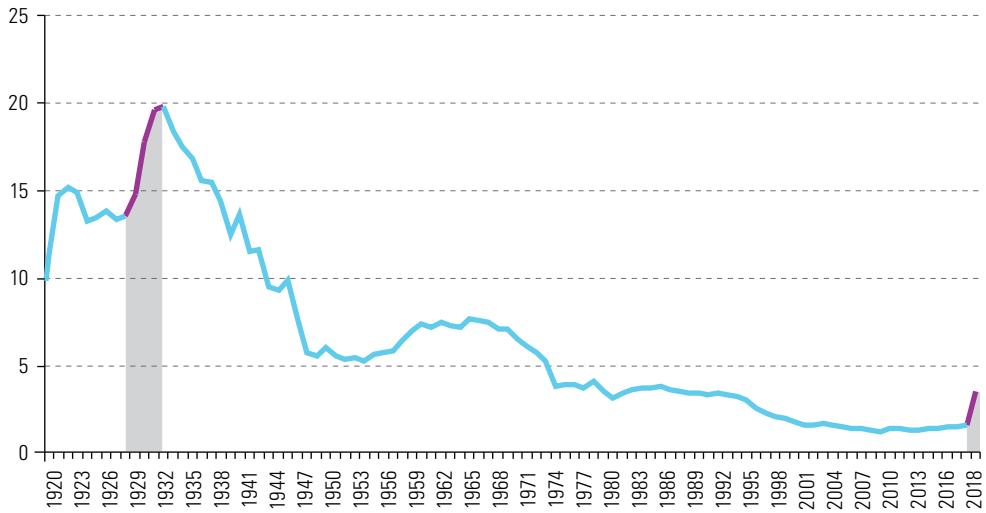
[11] Some countries, such as Argentina, Australia and Brazil, managed to avoid the surcharges by agreeing to limit their exports of aluminium and steel to the United States.

Table I.7
Import restrictions applied by the United States and retaliatory measures adopted by the trade partners affected, January–September 2018

Measures adopted by the United States	Reprisal measures
Restrictions on aluminium and steel imports – 10% surcharge on aluminium imports from all origins – 25% surcharge on steel imports from all origins	Trade partners' reaction – **European Union:** 25% surcharge on US$ 3.2 billion of United States products – **China:** surcharges of between 15% and 25% on a total of US$ 3 billion of United States products – Tariff hikes on United States products in Canada, the Russian Federation, India, Japan, Mexico and Turkey (between 15% and 40%, depending on the country and the product)
Restrictions on Chinese products – 25% surcharge on US$ 50 billion of Chinese products (June and July 2018) – 10% surcharge on an additional US$ 200 billion (September 2018)	China's reaction – Surcharges of between 10% and 25% on US$ 50 billion of United States products (June and July 2018) – Surcharge of 10% on US$ 60 billion of United States products (September 2018)

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of information from the United States Department of Commerce, the Ministry of Commerce of China and the World Trade Organization (WTO).

Figure I.34
United States: trend of the average applied tariff, 1920–2018[a]
(Percentages of total import value)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of D. Kopf, "The history of US protectionism, in one 230-year chart", 2018 [online] https://qz.com/1230399/a-history-of-tariffs-us-protectionism-in-one-230-year-chart/.
[a] The figures for 2017 and 2018 are estimates.

In this section, the computable general equilibrium (CGE) methodology (the Global Trade Analysis Project–GTAP multi-country model) is used to model the potential production and trade effects of various scenarios in the current climate of trade tensions (see table I.8).[12] The five scenarios considered represent a progressive aggravation of restrictive trade measures. To derive the effects that the change in the export component of aggregate demand would have on production in scenario 3 (currently applicable), variations of the output of 11 countries are simulated using the Leontief model.[13]

Figure I.35 shows the changes in the average tariffs that the United States and China are imposing on each other following the reciprocal application of surcharges, first for an amount of roughly US$ 50 billion in each direction, and later on an additional US$ 200 billion by the United States and US$ 60 billion by China. The average tariff imposed by the United States on imports from China has quadrupled, from 2.4% to 9.5%, while China's average tariff on goods from the United States has almost tripled, from 5.6% to 15.7%. The average tariff charged by both countries to all of their trading partners has also increased, although by less.

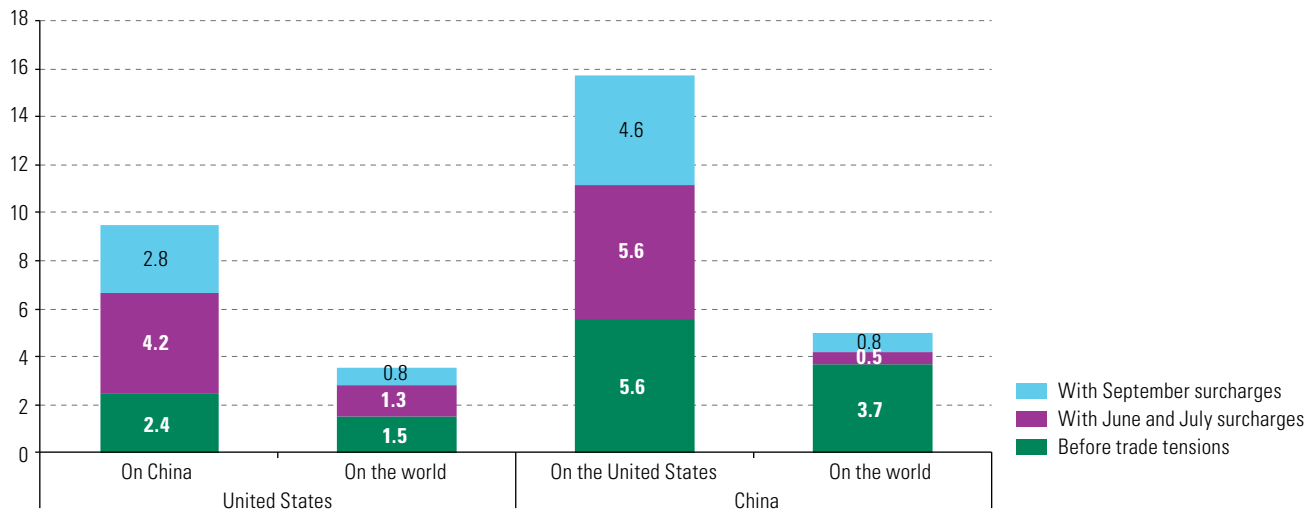
[12] The GTAP model assumes the existence of perfectly competitive markets with firms reporting zero profits, that there is full employment and that all factors are mobile in the countries and regions in question. Investment expenditure is determined by the savings rate. For a detailed description, see Schuschny, Durán and de Miguel (2007).
[13] Comparable input-output matrices are available in the following 11 countries: Argentina, the Bolivarian Republic of Venezuela, Brazil, Chile, Colombia, Costa Rica, Ecuador, Mexico, Paraguay, the Plurinational State of Bolivia and Uruguay. Saeteros (2018) performed similar exercises.

Table I.8
Simulation scenarios of the impact of trade tensions

Number	Characterization	Measures included
1	Initial	Surcharge on steel and aluminium imports into the United States
2	Tensions between the United States and China	Scenario 1 plus reciprocal surcharges imposed between the United States and China
3	Aggravation of trade tensions (current scenario)	Scenario 2 plus trade reprisals from other trade partners of the United States (European Union, Canada, Russian Federation, India, Mexico and Turkey)
4	Extreme scenario	Scenario 3 plus a 25% surcharge on automobiles imported into the United States and similar reprisals (25%) adopted by the European Union, Canada, China, Japan, the Republic of Korea and the rest of the world
5	"Trade war"	Scenario 4 plus the imposition, by the United States and China, of a 10% surcharge on their reciprocal imports that are currently not subject to surcharges

Source: Economic Commission for Latin America and the Caribbean (ECLAC).

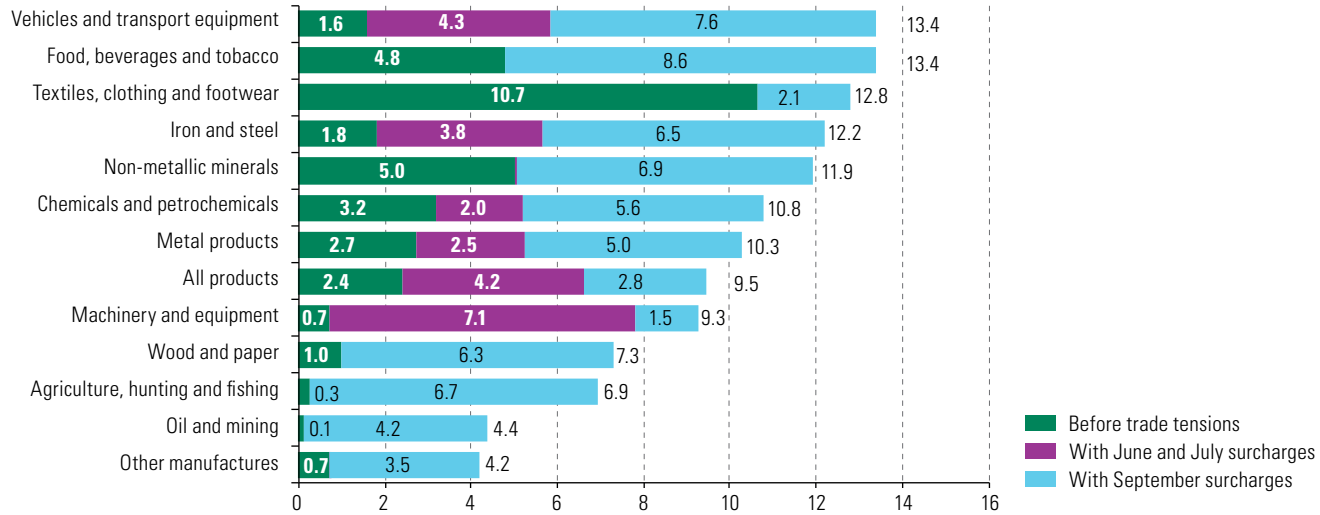
Figure I.35
United States and China: average tariff on reciprocal trade and trade with the world following the imposition of surcharges, 2018
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of information from the World Trade Organization (WTO), the United States Department of Commerce, the Ministry of Commerce of China and the United Nations International Trade Statistics Database (UN Comtrade).

The scenario of worsening trade tensions between the United States and China raises major questions about their impact on the region's exports. Notwithstanding the damage that such a scenario would cause to the global economy, and therefore to the region itself, there are also opportunities for exporters to exploit. For example, the tariff hikes imposed by the United States on a wide range of imports from China (see figure I.36) creates opportunities for countries in the region that can supply a similar range of products, while also benefiting from geographical proximity and preferential access to the United States market. This applies to Mexico in particular, in the case of vehicles, electronics and other manufactures, and also to Central America in the areas of textiles and clothing.

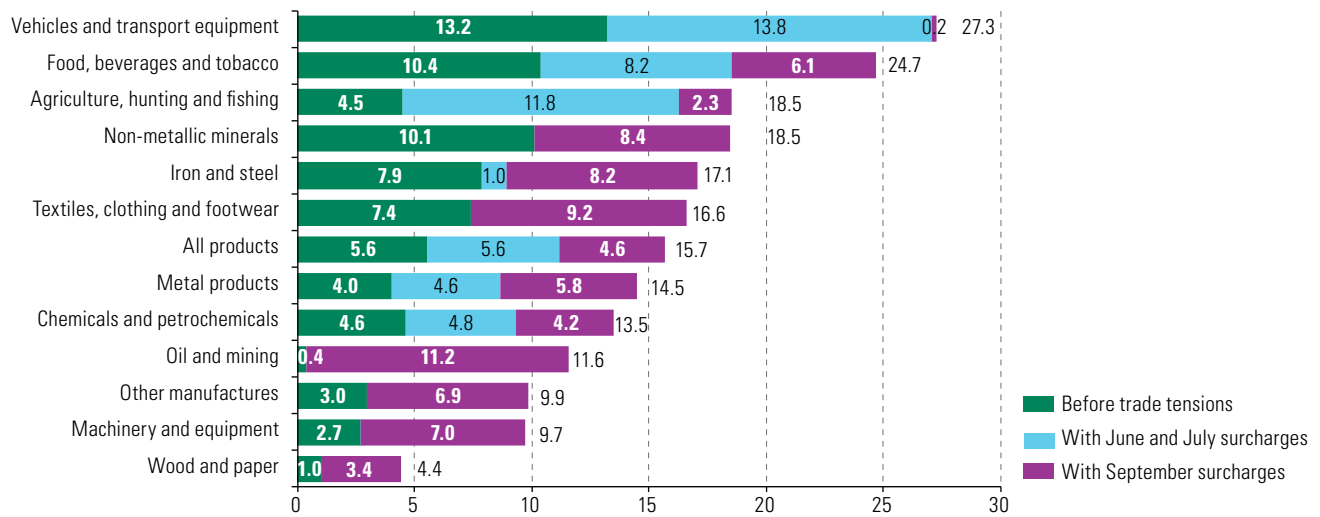
Figure I.36
United States: average tariffs applied to China following the imposition of surcharges, by sector, 2018
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of information from the World Trade Organization (WTO), the United States Department of Commerce, the Ministry of Commerce of China and the United Nations International Trade Statistics Database (UN Comtrade).

China, for its part, has raised its tariffs on a broad range of products from the United States (see figure I.37). In particular, the considerable increases imposed on crop and livestock products (meats, soybeans, orange juice and wine, among others) open up opportunities for countries in the region, particularly South American ones, that could supply these products. In addition to the major agricultural exporters, such as Argentina and Brazil, the three countries that currently have free trade agreements with China (Chile, Costa Rica and Peru) are in a particularly advantageous position.

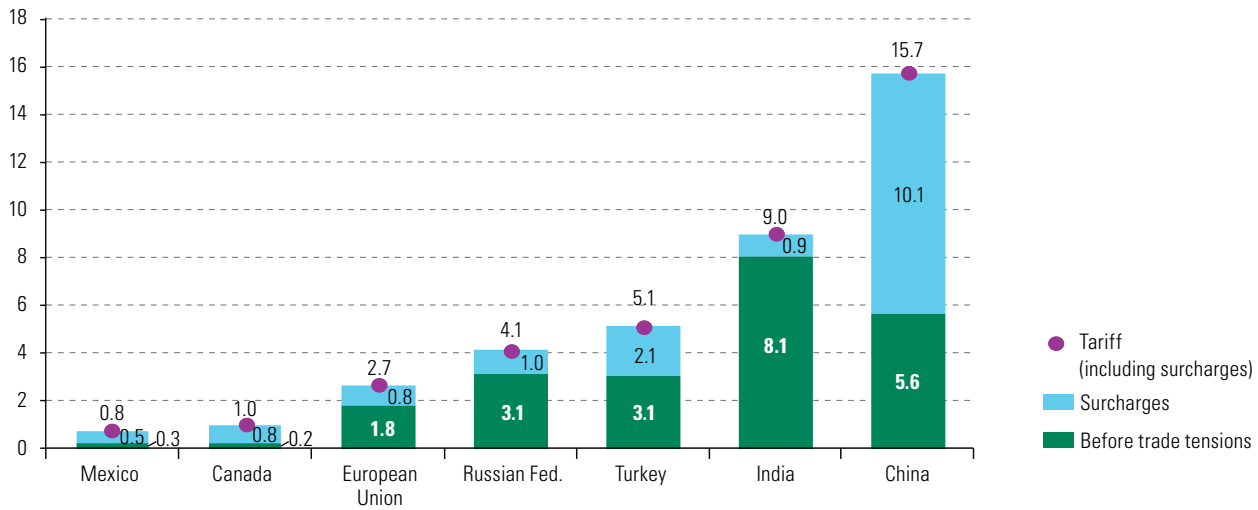
Figure I.37
China: average tariffs applied to the United States following the imposition of surcharges, by sector, 2018
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of information from the World Trade Organization (WTO), the United States Department of Commerce, the Ministry of Commerce of China and the United Nations International Trade Statistics Database (UN Comtrade).

In addition to China, several other trade partners have hiked their tariffs on United States products in retaliation for its surcharges on steel and aluminium imports (see figure I.38). In all of these markets, the increased cost of the affected United States products also opens niches for regional exports to expand. For example, in the European Union, the surcharges imposed on United States exports of cereals and food products, chemicals, vehicles and autoparts could encourage increased shipments from the countries of the region that can competitively supply some of the items in question. In the Canadian market, regional exports of textile products, insecticides, fungicides, paper products, meat, spirits and other alcoholic beverages, among others, could also benefit. Several of the region's countries have trade agreements in force with the European Union and Canada, so their products have preferential access to these markets.

Figure I.38
Selected countries and groupings: average tariffs applied to the United States following the introduction of retaliatory measures, 2018
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of information from the United Nations International Trade Statistics Database (UN Comtrade), the World Trade Organization (WTO), the United States Department of Commerce, the Ministry of Commerce of China and official sources from the countries.

The results obtained by the model for each of the scenarios described are presented below, considering firstly the production and trade impact in the United States and China, and later the impact on trade in Latin America and the Caribbean. It should be noted that the model is a comparative statics exercise which does not consider the impact of trade tensions on financial markets. Bollen and Rojas-Romagosa (2018), Freund and others (2018) and François, Baughman and Anthony (2018) recently conducted similar studies.

The production effects of the imposition of surcharges by the United States on China (for US$ 250 billion) and vice-versa (for US$ 110 billion) entail a heavier loss for China (-1.2%) than for the United States (-0.2%). This is because goods exports to the United States accounted for 3.6% of Chinese GDP in 2017, while goods exports to China only accounted for 0.7% of the United States' GDP in the same year. However, as the number of countries and sectors imposing surcharges on the United States increases (scenario 3), the output loss that it suffers will increase and reach a peak under the "trade war" scenario.

The simulation indicates that the impact of the current scenario on global output is zero. This explains why other countries would benefit from the trade diversion generated by the fact that they face comparatively lower tariffs in the United States (compared to China) and in China (compared to the United States). The effect on Latin America and the Caribbean is positive (0.7%); and in the case of Mexico —which could potentially replace Chinese manufactures in the United States market— it reaches a level of 1.2%. Bollen and Rojas-Romagosa (2018) and Freund and others (2018) also produce positive results for the region, particularly for Mexico (see table I.9), although their results are less positive than those obtained by ECLAC. This is because both studies simulate a scenario of lower trade barriers between China and the United States (reciprocal surcharges of just US$ 50 billion) and, therefore, of fewer opportunities for the region to substitute products from both countries.

Table I.9
World, selected countries and regions: impacts on gross production value under simulated trade tension scenarios
(Variations from the base line)

Regions/Countries	Economic Commission for Latin America and the Caribbean (ECLAC) (scenario 3)	Freund and others (2018) (scenario of reciprocal US$ 50 billion surcharges between China and the United States)	Bollen and Rojas-Romagosa (2018) (scenario of reciprocal US$ 50 billion surcharges between China and the United States)
World	0.0	0.0	-0.1
China	-1.1	-0.3	-1.2
United States	-0.6	-0.2	-0.3
Latin America and the Caribbean	0.7	0.1	0.1
Mexico	1.2	0.2	0.5
European Union	0.4	0.1	0.4
Rest of Asia	0.5	0.1	…

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Global Trade Analysis Project (GTAP), GTAP Data Base; C. Freund and others, "Impacts on global trade and income of current trade disputes", *Macroeconomic, Trade and Investment,* No. 22018, July 2018 and J. Bollen and H. Rojas-Romagosa, "Trade wars: Economic impacts of US tariff increases and retaliations. An international perspective", *CPB Background Document,* CPB Netherlands Bureau for Economic Policy Analysis, July 2018.

Whereas the estimated impacts of the different scenarios on the region's goods exports are minimal under scenario 1, they are boosted in scenarios 2 and 3 (especially in the case of Mexico). This mainly reflects trade diversion, in other words the possibility that products from the region will displace similar Chinese goods in the United States and similar United States goods in China. Among the countries of the region, Argentina, the Bolivarian Republic of Venezuela, Brazil, the Dominican Republic and Uruguay would receive the greatest boost to exports to China under the current scenario. On average, export gains for the region would be lower in the United States than in China, but in the first case they would be perceived by a larger number of countries (see table I.10).

The benefits for the region of expanding exports to China and the United States under scenario 3 vary between countries and across sectors. In the case of primary products (agriculture, hunting and fishing, and oil and mining), a large group of countries would perceive a predominantly positive effect in the Chinese market. In contrast, among manufactures, the positive effects are perceived both in China and in the United States, although mainly for the larger economies (Argentina, Brazil and Mexico). In the case of textile products, the comparative advantage of some of the region's countries is consolidated in the United States market (see table I.11).

Table I.10
Latin America: variation in goods exports and average tariff faced in the Chinese and United States markets under scenario 3
(Percentages)

Exporting region or country	China		United States	
	Variation in goods exports with respect to the baseline	Average applied tariff	Variation in exports of goods with respect to the baseline	Average applied tariff
Latin America	5.2	1.6	2.1	0.14
Argentina	15.4	4.2	1.3	2.9
Bolivia (Plurinational State of)	0.4	0.8	1.2	0.1
Brazil	7.4	1.9	5.3	1.0
Chile	0.4	0.0	1.2	0.0
Colombia	-0.3	0.4	-0.3	0.0
Costa Rica	-4.0	0.2	4.7	0.0
Dominican Republic	8.7	3.7	4.5	0.2
Ecuador	0.6	2.2	0.1	0.5
El Salvador	-0.1	0.4	1.1	0.0
Guatemala	2.0	4.5	0.5	0.1
Honduras	0.1	5.1	1.4	0.0
Mexico	-1.4	3.5	1.4	0.0
Nicaragua	1.4	3.5	0.9	0.1
Panama	1.3	1.7	3.5	0.0
Paraguay	-0.3	3.6	2.0	1.2
Peru	0.7	0.1	0.5	0.0
Uruguay	11.5	5.2	-2.6	3.1
Venezuela (Bolivarian Republic of)	4.3	0.3	2.1	0.4

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Global Trade Analysis Project (GTAP), GTAP Data Base.

Table I.11
Latin America (selected countries): sectors that receive a boost to their aggregate export demand as a result of greater demand in the United States or China under scenario 3[a]

Sector	Markets in which the impact is focused	Countries perceiving a production boost from the additional demand for exportable products
Agriculture, hunting and fishing	China	Argentina, Bolivarian Republic of Venezuela, Brazil, Chile, Ecuador, Paraguay, Peru, Plurinational State of Bolivia, Uruguay
Oil and mining	China	Argentina, Bolivarian Republic of Venezuela, Brazil, Chile, Ecuador, Paraguay, Peru, Plurinational State of Bolivia, Uruguay
Food, beverages and tobacco	China	Argentina, Bolivarian Republic of Venezuela, Brazil, Chile, Ecuador, Paraguay, Peru, Plurinational State of Bolivia
Wood, pulp and paper	China and the United States	Bolivarian Republic of Venezuela, Chile, Ecuador, Colombia, Mexico, Paraguay, Peru, Plurinational State of Bolivia
Textiles, clothing and footwear	United States	Brazil, Ecuador, Paraguay
Chemicals and pharmaceuticals	China and the United States	Argentina, Brazil, Chile
Non-metallic minerals	China and the United States	Argentina, Ecuador, Plurinational State of Bolivia
Metals and derivative products	China and the United States	Argentina, Bolivarian Republic of Venezuela, Brazil, Chile, Costa Rica, Mexico
Machinery and equipment	China and the United States	Mexico and Costa Rica in China and the United States, and all countries of the region in the United States
Automotive and autoparts	China and the United States	Argentina, Brazil, Colombia, Peru

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of simulations performed with the Leontief model applied to the input-output matrices of 11 countries in Latin America and the Caribbean.

[a] Sectors in which, following the boost to exports to China or the United States, the simulations reported increases in national output.

The potential gains for the region turn negative in scenario 4, as the intensification of trade restrictions undermines the outlook for the global economy. The region only sees its exports expand again in scenario 5, in which all trade between China and the United States remains subject to tariff hikes. This is probably because, in this scenario, new opportunities would be created for products from the region to displace Chinese goods in the United States and the latter's goods in China. Looking beyond these short-term gains, however, an escalation in protectionism between the world's two leading economies would pose serious risks to global economic growth, which the region would be unable to avoid.

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Annex I.A1

Table I.A1.1
Latin America and the Caribbean: value of exports and imports, 2015-2017
(Millions of dollars)

Countries/Regions/Groupings	Exports			Imports		
	2016	2017	2018	2016	2017	2018
Latin America and the Caribbean	**897 560**	**1 000 496**	**1 097 749**	**911 859**	**984 395**	**1 078 843**
Latin America	**870 766**	**971 502**	**1 065 237**	**864 797**	**940 086**	**1 031 729**
South America	**447 765**	**509 675**	**562 337**	**384 949**	**422 370**	**472 000**
Southern Common Market (MERCOSUR)	**291 446**	**328 315**	**357 939**	**227 542**	**250 199**	**282 063**
Argentina	57 930	58 446	61 791	53 505	63 993	64 822
Brazil	184 453	217 243	244 296	139 416	153 215	186 700
Paraguay	11 155	12 082	12 871	9 789	11 524	12 140
Uruguay	10 504	11 561	11 302	8 463	8 665	9 056
Venezuela (Bolivarian Republic of)	27 403	28 983	27 679	16 370	12 801	9 345
Andean Community	**95 586**	**112 130**	**125 934**	**102 114**	**110 864**	**121 846**
Bolivia (Plurinational State of)	7 000	7 752	9 036	7 888	8 621	8 787
Colombia	34 079	39 482	43 771	43 239	44 241	48 419
Ecuador	17 425	19 621	22 309	15 858	19 298	22 064
Peru	37 082	45 275	50 818	35 128	38 704	42 576
Chile	60 733	69 230	78 464	55 293	61 308	68 091
Central America	**37 349**	**40 066**	**41 274**	**67 883**	**72 419**	**76 540**
Costa Rica	10 100	10 808	11 772	14 526	15 150	16 002
El Salvador	4 321	4 662	4 977	8 954	9 499	10 565
Guatemala	10 581	11 118	11 042	15 767	17 110	18 372
Honduras	7 940	8 675	8 883	10 559	11 324	12 276
Nicaragua	3 772	4 143	3 920	6 384	6 613	5 789
Panama (excluding Colón Free Zone)	635	660	680	11 693	12 724	13 233
Panama (Colón Free Zone)	11 705	12 474	13 385	20 513	21 912	22 788
Mexico	374 304	409 775	448 807	387 368	420 764	456 319
The Caribbean	**26 437**	**28 506**	**31 946**	**51 145**	**46 930**	**51 197**
Caribbean Community (CARICOM)	**15 089**	**16 519**	**19 127**	**26 549**	**22 397**	**24 326**
Bahamas	444	550	630	2 593	3 180	3 244
Barbados	517	485	523	1 540	1 520	1 611
Belize	443	458	407	916	846	943
Guyana	1 434	1 042	1 099	1 341	1 027	1 113
Haiti	995	980	1 075	3 183	3 616	3 888
Jamaica	1 195	646	686	4 169	2 386	2 561
Suriname	1 440	2 028	2 308	1 202	1 293	1 509
Trinidad and Tobago	8 214	9 927	11 982	9 422	6 105	6 844
Organization of Eastern Caribbean States (OECS)	**406**	**404**	**417**	**2 182**	**2 423**	**2 613**
Antigua and Barbuda	78	80	95	503	638	711
Dominica	26	24	24	188	199	210
Grenada	38	32	34	315	344	376
Saint Kitts and Nevis	51	50	52	308	322	336
Saint Lucia	166	176	167	576	586	597
Saint Vincent and the Grenadines	47	42	44	292	334	381
Cuba	1 508	1 866	1 640	7 198	6 832	6 968
Dominican Republic	9 840	10 121	11 178	17 399	17 700	19 903

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official data from the countries' balance of payments, central banks and national institutes of statistics.

Table I.A1.2
Latin America and the Caribbean: variation in the value of exports to selected partners, 2017 and projection for 2018
(Percentages)

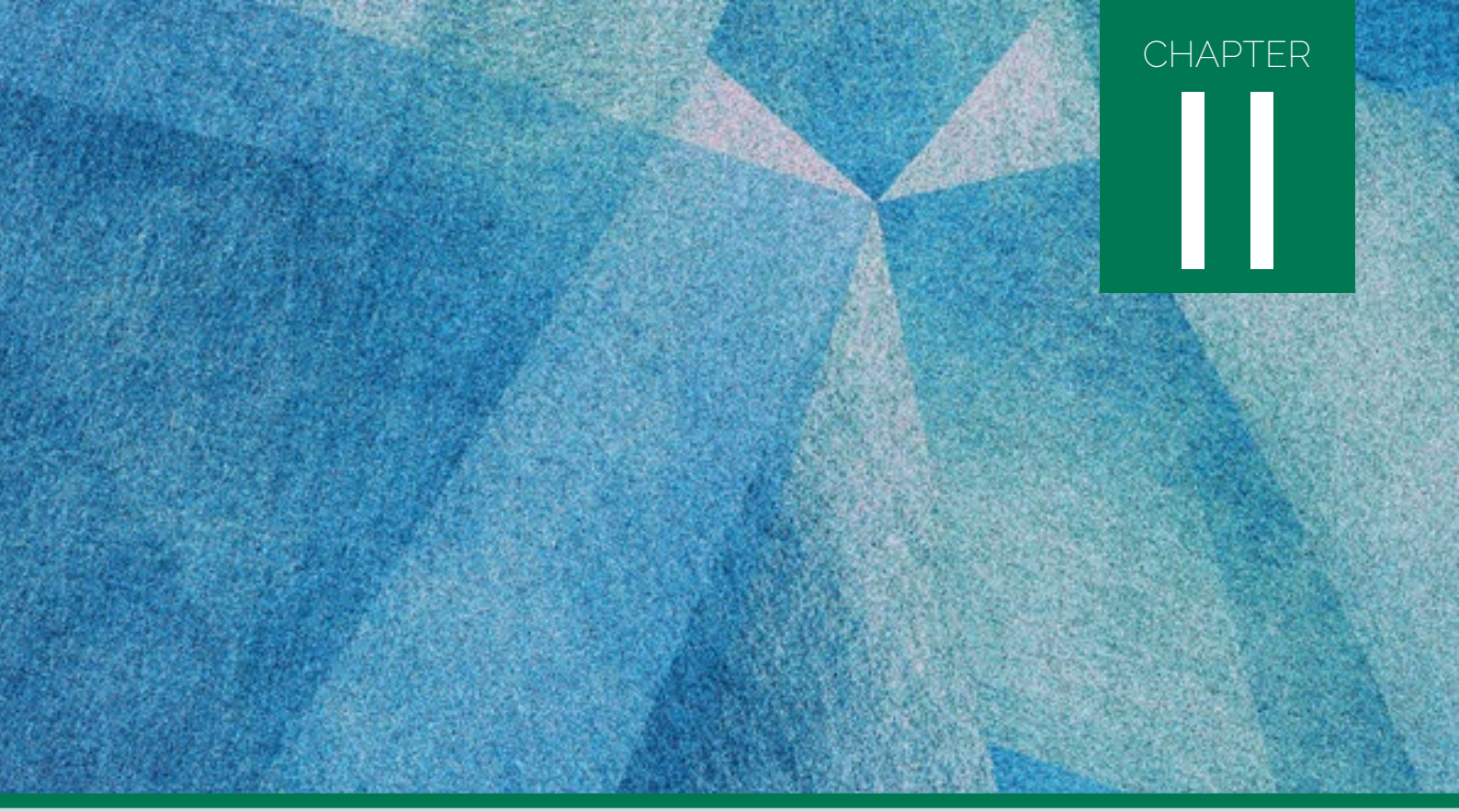
Countries/Region	European Union		United States		China		Rest of Asia		Latin America and the Caribbean	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
Latin America and the Caribbean	**5.3**	**9.3**	**8.7**	**7.2**	**29.5**	**28.0**	**25.2**	**5.9**	**10.2**	**12.0**
Argentina	2.7	11.4	0.6	-10.5	-2.1	-20.3	-12.7	-11.2	5.2	18.7
Bolivia (Plurinational State of)	2.0	8.5	-39.7	-20.3	-15.6	17.3	78.1	6.5	6.0	29.5
Brazil	4.5	16.8	16.0	8.9	35.2	37.5	16.4	2.4	17.7	12.3
Chile	17.0	8.0	18.4	9.2	11.3	33.2	21.5	0.0	10.4	4.9
Colombia	9.7	-8.3	11.8	1.2	109.1	10.7	22.3	14.7	25.3	10.3
Costa Rica	13.7	3.4	7.0	9.0	176.4	120.4	38.3	47.9	0.8	3.9
Cuba	24.4	-27.8	...	...	44.6	1.2	-65.9	-29.6	17.2	8.1
Dominican Republic	19.0	11.2	12.6	7.9	37.1	27.9	64.4	36.5	16.5	-0.7
Ecuador	12.1	2.2	11.4	20.2	17.6	70.3	29.1	1.5	4.8	9.2
El Salvador	5.6	-10.1	0.7	7.6	678.4	83.6	54.1	-41.3	11.0	8.7
Guatemala	4.6	1.3	6.8	7.7	-19.7	-13.9	-10.5	-12.3	4.3	-0.5
Honduras	56.7	-4.1	7.9	4.5	42.8	111.9	-3.1	19.0	-3.0	-7.2
Mexico	18.6	10.9	8.1	8.8	24.1	14.3	21.6	9.5	9.5	11.9
Nicaragua	42.9	3.4	7.3	-2.7	68.5	8.5	68.0	10.8	5.4	-19.3
Paraguay	4.9	-33.0	-17.4	5.1	32.2	-6.9	69.1	-23.7	-2.1	30.4
Peru	19.0	12.4	12.6	14.2	37.1	20.8	64.4	19.2	16.5	7.7
Uruguay	-4.6	-3.5	1.7	0.9	10.6	6.5	13.9	9.7	9.4	10.8
Venezuela (Bolivarian Republic of)	11.2	-52.3	11.4	-35.1	73.5	-12.2	53.2	13.3	18.8	10.4

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official data from the countries' balance of payments, central banks and national institutes of statistics.

Table I.A1.3
Latin America and the Caribbean: variation in the value of imports from selected partners, 2017 and projection for 2018
(Percentages)

Countries/Region	European Union		United States		China		Rest of Asia		Latin America and the Caribbean	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
Latin America and the Caribbean	**7.6**	**4.0**	**7.6**	**8.7**	**9.0**	**13.0**	**8.1**	**5.0**	**11.0**	**9.0**
Argentina	16.6	1.1	9.2	10.3	17.6	6.0	16.1	1.5	28.6	3.4
Bolivia (Plurinational State of)	21.7	26.0	-8.2	-22.7	21.0	0.3	-6.2	19.8	13.6	-2.2
Brazil	1.2	9.2	4.4	10.9	16.9	29.4	12.2	14.8	7.0	12.2
Chile	-3.0	8.8	15.6	18.4	9.3	8.7	13.0	10.0	19.2	9.7
Colombia	5.4	12.5	1.1	8.0	1.4	15.7	10.4	4.5	-1.2	14.2
Costa Rica	7.4	1.2	7.1	9.1	0.0	3.1	-5.9	-0.7	2.0	3.7
Cuba	6.0	8.0	...	...	-23.8	-36.7	-41.7	14.6	2.1	14.3
Dominican Republic	11.8	-3.0	13.8	17.3	7.5	12.7	-4.7	-3.3	17.3	9.6
Ecuador	38.6	11.4	13.5	24.8	12.2	14.7	23.0	10.3	27.3	7.3
El Salvador	18.5	-1.9	-8.2	9.4	69.0	17.5	30.9	11.1	2.3	10.9
Guatemala	10.8	14.8	12.2	3.1	6.4	7.7	-8.9	4.0	5.4	7.9
Honduras	-7.1	3.3	25.0	13.9	-23.9	18.7	-25.8	8.1	18.0	-1.0
Mexico	14.6	8.0	8.3	9.2	6.7	9.3	8.1	3.3	7.5	12.6
Nicaragua	5.4	-19.8	15.3	17.5	...	...	-7.4	-26.5	3.8	-20.1
Paraguay	28.2	6.8	28.8	4.2	38.5	-1.2	47.3	13.6	8.6	9.3
Peru	11.8	-3.0	13.8	17.4	7.5	12.8	-4.7	-3.3	-17.3	9.5
Uruguay	-10.4	-14.2	64.2	-35.3	10.6	6.5	13.9	7.9	9.9	10.8
Venezuela (Bolivarian Republic of)	-58.0	-66.2	-20.3	-30.3	-18.5	-35.5	-29.2	-30.3	-35.8	5.0

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of official data from the countries' balance of payments, central banks and national institutes of statistics.



CHAPTER II

The region in the global minerals and metals trade

II

Introduction

The Latin America region is among the world's most richly endowed with minerals and metals.[1] As a result, this sector has historically accounted for a large share of the export baskets of a number of the region's countries, particularly in South America. Notwithstanding its undeniable contribution to currency earnings and fiscal revenues, among other benefits, this type of specialization poses a variety of public policy challenges. They include the need to mitigate countries' vulnerability to price fluctuations, add value to the sector's products, enhance linkages with local suppliers of goods and services and reduce the negative socio-environmental impacts generally associated with extractive activities.

Addressing these challenges is made all the more urgent and difficult by climate change. If determined progress is to be made in decarbonizing the global economy, an array of mineral- and metal-intensive technologies will need to be rolled out over the coming decades. The region has major reserves of a number of the necessary resources, and this means that, with the right policies, it has the opportunity to move forward simultaneously with sustainability and with production and export diversification.

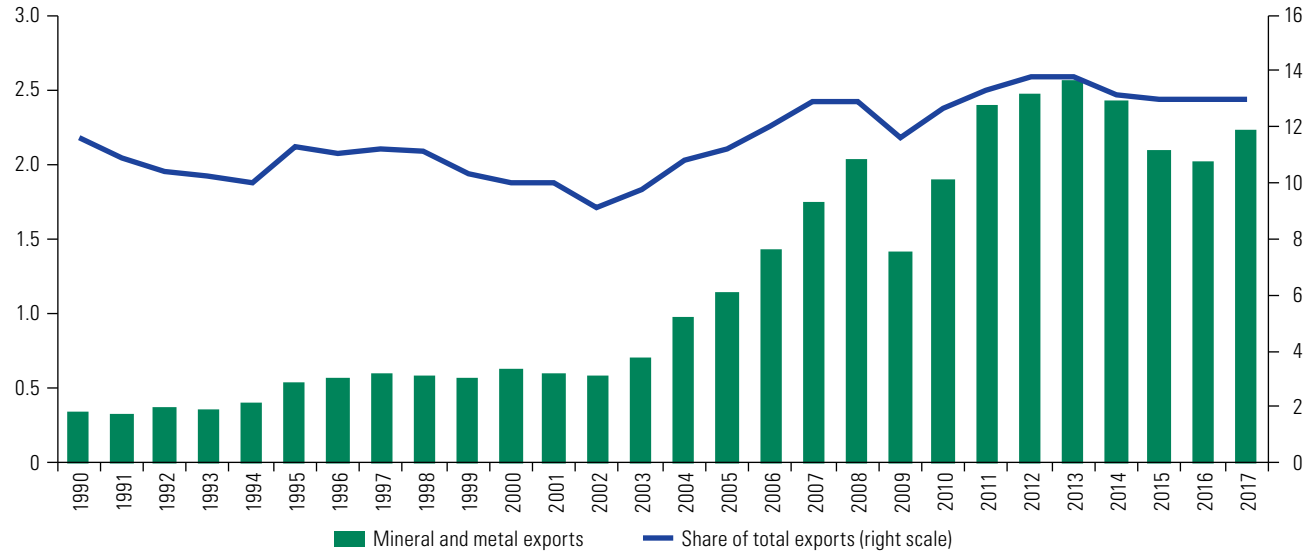
This chapter begins with an overview of the global minerals and metals trade (section A), while the next four sections focus on the region's performance from different vantage points and with different methodologies. Section B analyses the evolution of its minerals and metals trade since the 1990s in terms of composition, partners and overall trade shares, among other variables. Section C uses input-output tables to briefly review the part played by the region's mineral and metal exports in global value chains. Section D presents an analysis of the region's minerals and metals trade in physical terms, with a view to highlighting the sustainability challenges faced by the sector. Section E addresses the opportunities offered to the region by the global demand for metals associated with the increasing roll-out of clean technologies such as electromobility, concentrating on the case of lithium. Lastly, section F presents some conclusions.

A. China, the United States and Germany are the main players in the global minerals and metals trade

The global minerals and metals trade was worth over US$ 2.2 trillion in 2017. Since 1990, the sector's share of global goods exports has ranged from 9% to 13% (see figure II.1). The iron and steel, precious metals and non-metallic minerals clusters are those with the greatest weight in the global minerals and metals trade, with shares of 31%, 23% and 16%, respectively. Next come various metals, copper, and bauxite and aluminium (see figure II.2). These six product groups represented an average of 97% of the sector's global trade by value between 2015 and 2017.

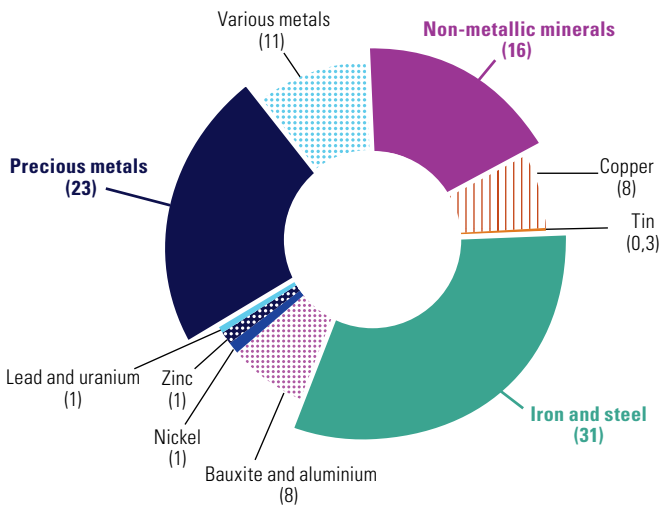
[1] For the purposes of this chapter, the minerals and metals sector includes 10 clusters (non-metallic minerals, iron and steel, copper, bauxite and aluminium, tin, zinc, lead and uranium, nickel, precious metals and various metals) and excludes energy mining (coal, oil and gas, etc.). Each cluster is divided in turn into three stages by the degree of processing of its products: raw materials, semi-finished products and finished products. Table II.A1.1 of the annex presents details of the products included in each cluster and stage.

Figure II.1
World mineral and metal exports, 1990-2017
(Trillions of dollars and percentages of world goods exports)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

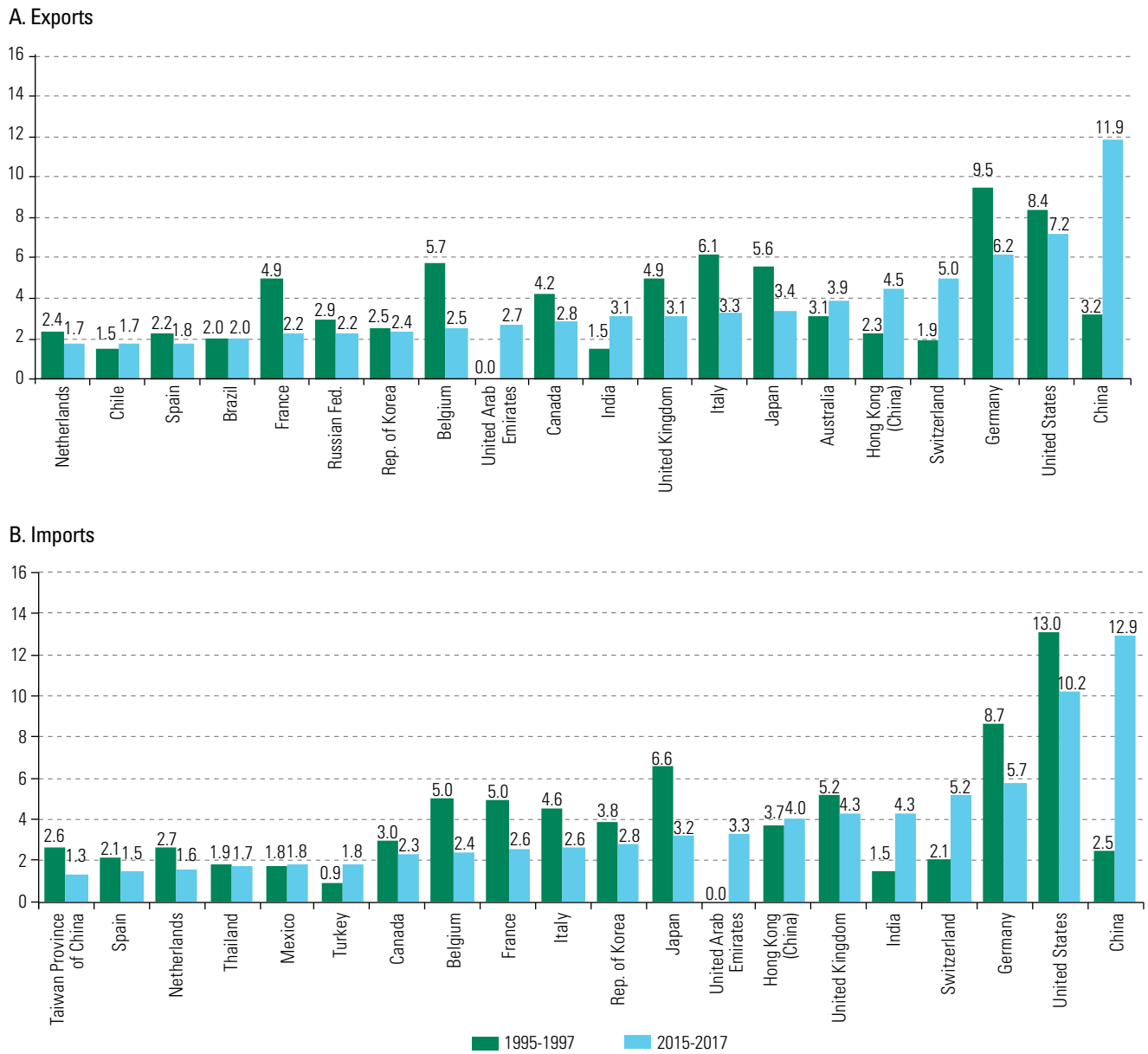
Figure II.2
Composition of world mineral and metal exports in value terms by cluster, averages for 2015-2017
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

When the 20 largest global exporters and importers of minerals and metals are compared, 16 countries appear in both categories. China, the United States and Germany, the three largest global exporters and importers of goods in general, are also the largest exporters and importers of minerals and metals, accounting for 25% of the sector's shipments and 29% of its imports by value. However, while the shares of the United States and Germany in both flows has declined in the past 20 years, China's has greatly increased, so that it has overtaken both countries and positioned itself as the world's leading exporter and importer (see figure II.3).

Figure II.3
Shares of the 20 largest exporters and importers in the global minerals and metals trade, averages for 1995-1997 and 2015-2017[a]
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.
[a] The figures for Belgium and the Netherlands include substantial re-exports.

China's current position as the world's largest buyer of minerals and metals is a direct consequence of the very strong growth in its economy over the last four decades, which has translated into high demand for products such as copper, iron ore, zinc and bauxite, these being essential inputs for a variety of industries (iron and steel, electronics and automobiles, among others) and for the building of infrastructure. Meanwhile, China's shipments of finished and semi-finished products are the main reason for its preeminent global position as an exporter of minerals and metals. These products include, among others, articles of jewellery, cooking utensils, metal structures of iron, steel or aluminium and building materials.

Only two countries in Latin America and the Caribbean feature among the world's top 20 mineral and metal exporters: Brazil, placed seventeenth, and Chile, placed nineteenth. Mexico is the sixteenth-largest importer. If the same countries are ranked by the size of their trade surpluses in minerals and metals, however, Chile and Brazil rank second and third in the world, respectively, while Mexico has run an average annual deficit of US$ 7.5 billion over the last three years (see table II.1).

Table II.1
Largest exporters and importers of minerals and metals by trade balance, annual averages for 2015-2017[a]
(Billions of dollars)

Rank	Country	Exports	Imports	Balance
1	Australia	79.058	21.395	57.663
2	**Chile**	**35.184**	**4.649**	**30.535**
3	**Brazil**	**40.712**	**12.050**	**28.662**
4	Russian Federation	45.369	18.795	26.574
5	Italy	65.717	53.071	12.646
6	Canada	56.909	46.750	10.159
7	Hong Kong (China)	90.439	81.385	9.053
8	Germany	124.378	116.755	7.623
9	Spain	35.662	29.662	6.000
10	Japan	68.551	65.030	3.521
11	Netherlands	34.724	32.137	2.587
12	Belgium	51.499	48.946	2.554
13	Taiwan Province of China	27.215	26.543	0.673
14	Turkey	33.868	37.275	-3.407
15	Switzerland	100.195	105.729	-5.534
16	**Mexico**	**31.448**	**38.928**	**-7.480**
17	France	44.975	52.726	-7.751
18	Republic of Korea	47.899	56.541	-8.641
19	Thailand	24.855	34.577	-9.721
20	United Arab Emirates	54.325	66.654	-12.328
21	China	240.117	261.918	-21.801
22	United Kingdom	63.182	87.047	-23.864
23	India	62.915	87.060	-24.145
24	United States	144.619	206.686	-62.067

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.
[a] The figures for Belgium and the Netherlands include substantial re-exports.

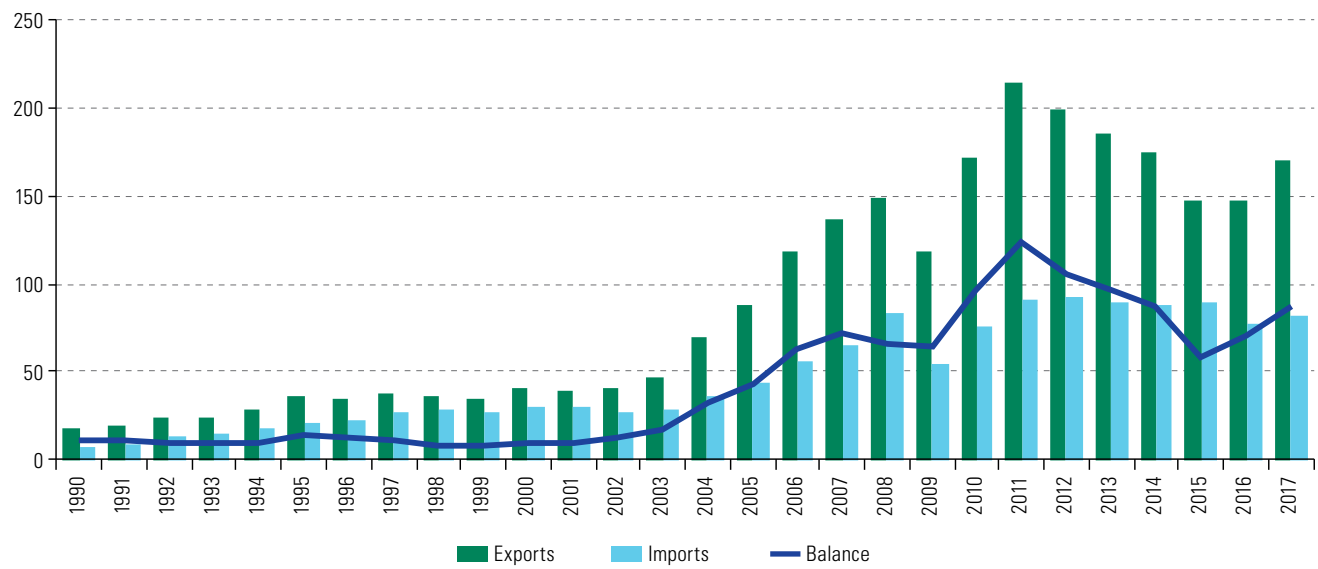
A number of medium-term trends point to sustained demand for minerals and metals over the coming years. They include a rise in the global urbanization rate from the current 55% to a projected 68% by 2050 (United Nations, 2018), the rapid roll-out of electric vehicles and mineral- and metal-intensive renewable energies such as solar and wind energy, the implementation of the Made in China 2025 industrial programme and demand from Industry 4.0 (Zhou, 2017; The Economist Intelligence Unit, 2018; ICA, 2017).

B. The Latin America and the Caribbean region is a net exporter of minerals and metals, with a growing share of raw materials

1. Heavy concentration by country, product and firm

Mineral and metal exports from Latin America and the Caribbean totalled US$ 170 billion in 2017, equivalent to 17% of the region's total goods shipments by value and 8% of all global mineral and metal exports. The sector's share of the region's total goods exports has ranged between 17% and 20% since 2007. Its mining exports almost quadrupled in value during the commodity price supercycle between 2002 and 2008. In the same period, its shipments of minerals and metals also grew in volume terms, albeit by much less (53%), rising from 289 million tons in 2002 to 443 million tons in 2008 (see section D). After declining during the global financial crisis in 2009 and then recovering strongly in 2010 and 2011, mining shipments have not regained the dynamism of the previous decade in value terms, but they have risen consistently in volume terms. In any event, the region still has a large trade surplus in the sector (see figure II.4).

Figure II.4
Latin America and the Caribbean: trade in minerals and metals, 1990-2017
(Billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Since 2011, following the end of the commodity supercycle, prices for the main mining products exported by the region have fallen sharply and evinced volatility. From 2016 to June 2018, however, consumption of some of the sector's products trended upward. Thus, the prices of the main metals exported by the region were up by an average of 9% in the first half of 2018 relative to the same period of 2017, with double-digit increases in the cases of copper, nickel, tin and aluminium. For the whole year, metal prices are projected to rise by between 2% and 5%, with the exception of steel products and iron, whose prices have remained low (see figure II.5).

Figure II.5
Latin America and the Caribbean: annual price indices for selected minerals and metals, 2000-2018[a]
(Base year 2010=100)

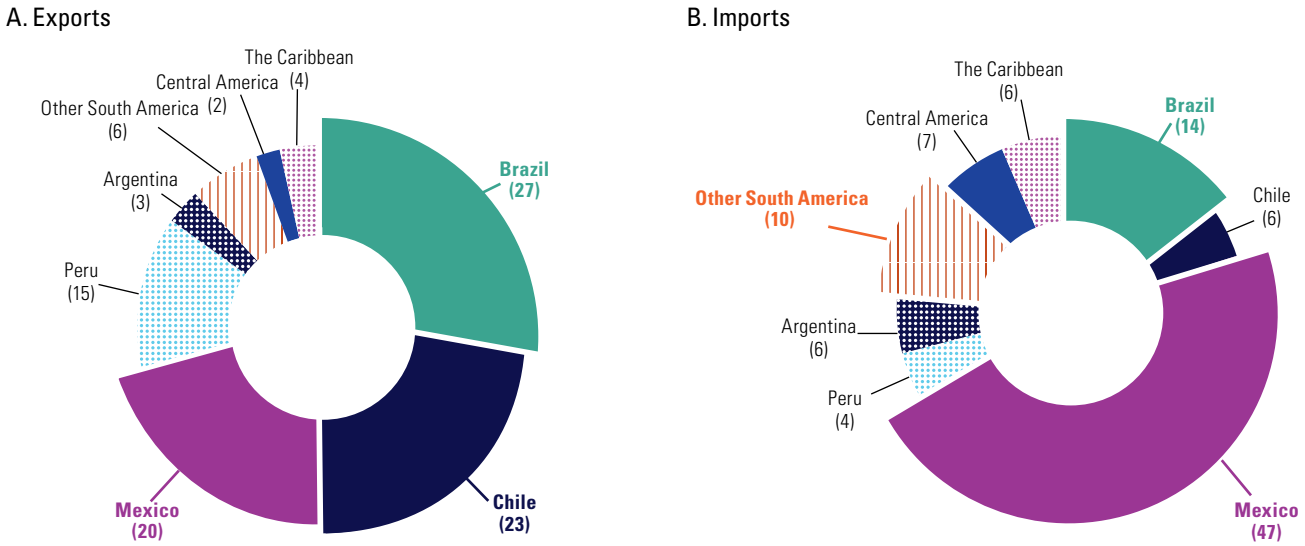
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of CEPALSTAT [online database] http://estadisticas.cepal.org/cepalstat/portada.html?idioma=english, United Nations Conference on Trade and Development (UNCTAD), World Bank, The Economist Intelligence Unit and the International Monetary Fund (IMF).

[a] The 2018 figures are preliminary projections based on official information for the first five months of the year and on projections by the United Nations Conference on Trade and Development (UNCTAD), the World Bank, The Economist Intelligence Unit and IMF.

The intensification of trade tensions during 2018 (see chapter I) has increased short-term price volatility for some metals, mainly copper and iron. In view of the demand trends mentioned in the previous section, however, medium-term metal prices are expected to remain quite well above the average of the first half of the present decade and their long-term level prior to the supercycle.

Regional shipments of minerals and metals are heavily concentrated in a few countries, with Brazil, Chile, Mexico and Peru accounting for 85% of total exports by value (see figure II.6A). In the case of imports, Mexico accounts for almost half by value, followed by Brazil with 14% (see figure II.6B). This is explained by the fact that these are the two largest economies in the region and also its two leading industrial powers, which implies strong demand for minerals and metals. Brazil is well endowed with mining resources, particularly iron ore, and thus less import-dependent than Mexico.

Figure II.6
Latin America and the Caribbean: structure of trade in minerals and metals by country, averages for 2015-2017
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

The Caribbean and particularly Central America account for larger shares of the region's imports of minerals and metals than of its exports. In fact, all the Central American countries except Guatemala ran trade deficits in this sector in the three-year period from 2015 to 2017. Of the Caribbean countries, Guyana, Jamaica and Suriname are the only ones to have run surpluses, thanks to the importance of the aluminium and bauxite and precious metals clusters in their exports (see table II.A1.2 in the annex).

The three main export mining clusters in the region are copper, iron and steel, and precious metals, accounting between them for 77% of regional mineral and metal shipments by value between 2015 and 2017 (see figure II.7). Next in importance is the various metals cluster, which represents 6% of the export total. This groups together products made from some combination of iron, steel, copper and their alloys and other metals (antimony, beryllium, cobalt, chromium, zirconium, lithium, neodymium, indium, titanium, tungsten, molybdenum, manganese and other rare metals).

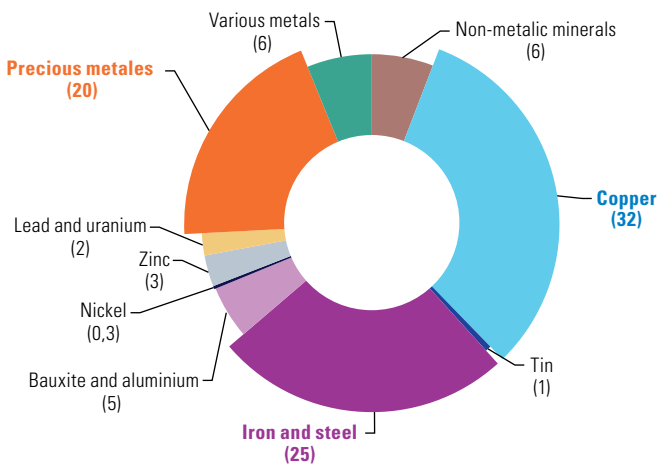


Figure II.7
Latin America and the Caribbean: composition in value terms of mineral and metal exports by cluster, averages for 2015-2017[a]
(Percentages)

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.
[a] Includes estimates of mirror flows for 2017 in the cases of the Bolivarian Republic of Venezuela, Cuba and Haiti.

The region's mining exports have expanded in all product groups over the last two decades, with the exceptions of bauxite and aluminium and of nickel, which have seen declines over the past decade. The shares of the copper, iron and steel, various metals, bauxite and aluminium, nickel, and non-metallic minerals clusters in total mining exports have dropped since the middle of the last decade. Conversely, the share of precious metals doubled from 9.9% in the period 2005-2007 to 19.7% in 2015-2017 (see table II.2).

Table II.2
Latin America and the Caribbean: mineral and metal exports by cluster, annual averages for 1995-1997, 2005-2007 and 2015-2017
(Billions of dollars and percentages)

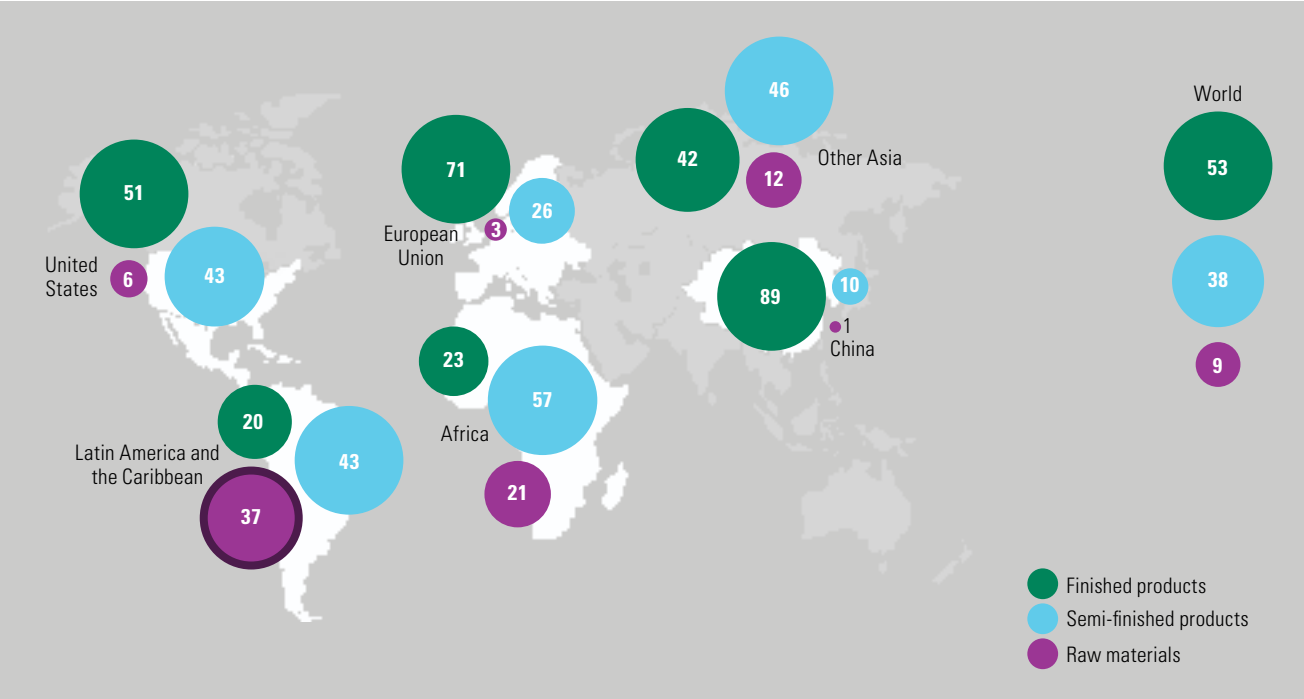
Cluster	Amount *(billions of dollars)*			Share *(percentages)*		
	1995-1997	2005-2007	2015-2017	1995-1997	2005-2007	2015-2017
Non-metallic minerals	3.497	7.369	9.131	9.0	6.1	5.8
Copper	9.062	42.421	49.835	23.3	35.0	31.9
Tin	0.284	0.605	0.859	0.7	0.5	0.5
Iron and steel	13.057	35.633	39.772	33.6	29.4	25.5
Bauxite and aluminium	4.728	8.476	7.910	12.2	7.0	5.1
Nickel	0.097	1.011	0.463	0.3	0.8	0.3
Zinc	1.034	3.591	4.651	2.7	3.0	3.0
Lead and uranium	0.383	0.905	3.300	1.0	0.7	2.1
Precious metals	3.626	11.957	30.721	9.3	9.9	19.7
Various metals	3.068	9.068	10.012	7.9	7.5	6.4
Minerals and metals	**38.835**	**121.035**	**156.264**	**100.0**	**100.0**	**100.0**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

The region's exports of minerals and metals have a particularly high raw materials content. The low proportion of finished products in the total (20%) is comparable only with that of Africa (23%) and far below their share in the exports of the United States, the European Union, China and the rest of Asia. Indeed, the proportion of raw materials in the region's mineral and metal exports (37%) is higher than any other world region's and four times as great as the share of raw materials in the global exports of the sector overall, which is 9% (see figure II.8).

At the aggregate level, the share of raw materials in the region's mineral and metal exports has almost doubled in the last two decades (from 20% to 37%), while the shares of semi-finished and finished products have dropped from 48% to 43% and from 32% to 20%, respectively. The export shares of raw materials have increased in all clusters except tin (see table II.3). Particular mention should be made of the copper, iron and steel, nickel, zinc, and lead and uranium clusters, where the shares of semi-finished products such as semi-finished copper and its unwrought alloys, cast iron and ferroalloys and wrought alloys (wires, piping, tubes, laminated products, etc.) have decreased.

Figure II.8
Selected countries, regions and groupings: value composition of mineral and metal exports by degree of processing, averages for 2015-2017
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Table II.3
Latin America and the Caribbean: exports of minerals and metals by degree of processing, annual averages for 1995-1997, 2005-2007 and 2015-2017
(Percentages of total value exported by each cluster)

Cluster	Stage I Raw materials			Stage II Semi-finished products			Stage III Finished products		
	1995-1997	2005-2007	2015-2017	1995-1997	2005-2007	2015-2017	1995-1997	2005-2007	2015-2017
Non-metallic minerals	16.1	14.8	21.9	30.5	26.8	21.7	53.4	58.4	56.4
Copper	24.1	38.9	55.6	69.9	56.0	40.9	5.9	5.1	3.6
Tin	31.3	5.6	4.8	67.8	90.5	93.2	0.8	3.9	2.0
Iron and steel	23.8	27.3	43.0	29.5	31.5	22.3	46.8	41.2	34.7
Bauxite and aluminium	6.0	5.0	6.6	72.8	69.6	64.0	21.2	25.4	29.4
Nickel	0.0	11.1	33.0	93.4	80.8	41.3	6.6	8.1	25.7
Zinc	54.6	67.0	72.4	34.2	28.7	25.3	11.2	4.3	2.4
Lead and uranium	54.5	60.8	86.8	43.2	36.1	12.2	2.3	3.0	1.0
Precious metals	5.0	4.8	7.1	83.2	81.8	88.8	11.8	13.4	4.0
Various metals	14.5	49.1	17.5	9.6	9.9	15.6	75.9	41.0	66.8
Combined metals	0.0	0.0	0.0	2.6	7.0	4.8	97.4	93.0	95.2
Other metals	66.8	86.6	47.4	27.5	11.9	34.0	5.7	11.9	18.5
Minerals and metals	**19.6**	**29.7**	**37.0**	**48.4**	**46.5**	**43.4**	**31.9**	**23.9**	**19.7**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

In contrast with the general trend, there have been increases in the level of processing of exports from the tin, precious metals and various metals clusters. In the first two cases, this is explained by an increase in the proportion of semi-finished products (unalloyed unwrought tin and its unwrought alloys and semi-finished products made from precious stones, silver, platinum and gold). In the case of various metals, what stands out is the high proportion of finished products made from combined metals, such as tools, knives, scissors, locks, milling machines and saw blades. Exports of non-metallic minerals also consist largely of finished products.

Breaking down the region's mining exports at the product level confirms the predominance of raw materials and semi-finished products. Thus, the top 20 export products are dominated by those in the first stage of processing, such as concentrates of copper, iron, zinc, gold and silver. The only ones involving a higher degree of processing are iron tubes, other steel products, flexible tubes of base metal and articles of jewellery, which rank between fifteenth and eighteenth on the list (see table II.4). The top 20 export products have in common the fact that they are inputs for different industries, including both export industries and others oriented towards domestic markets.

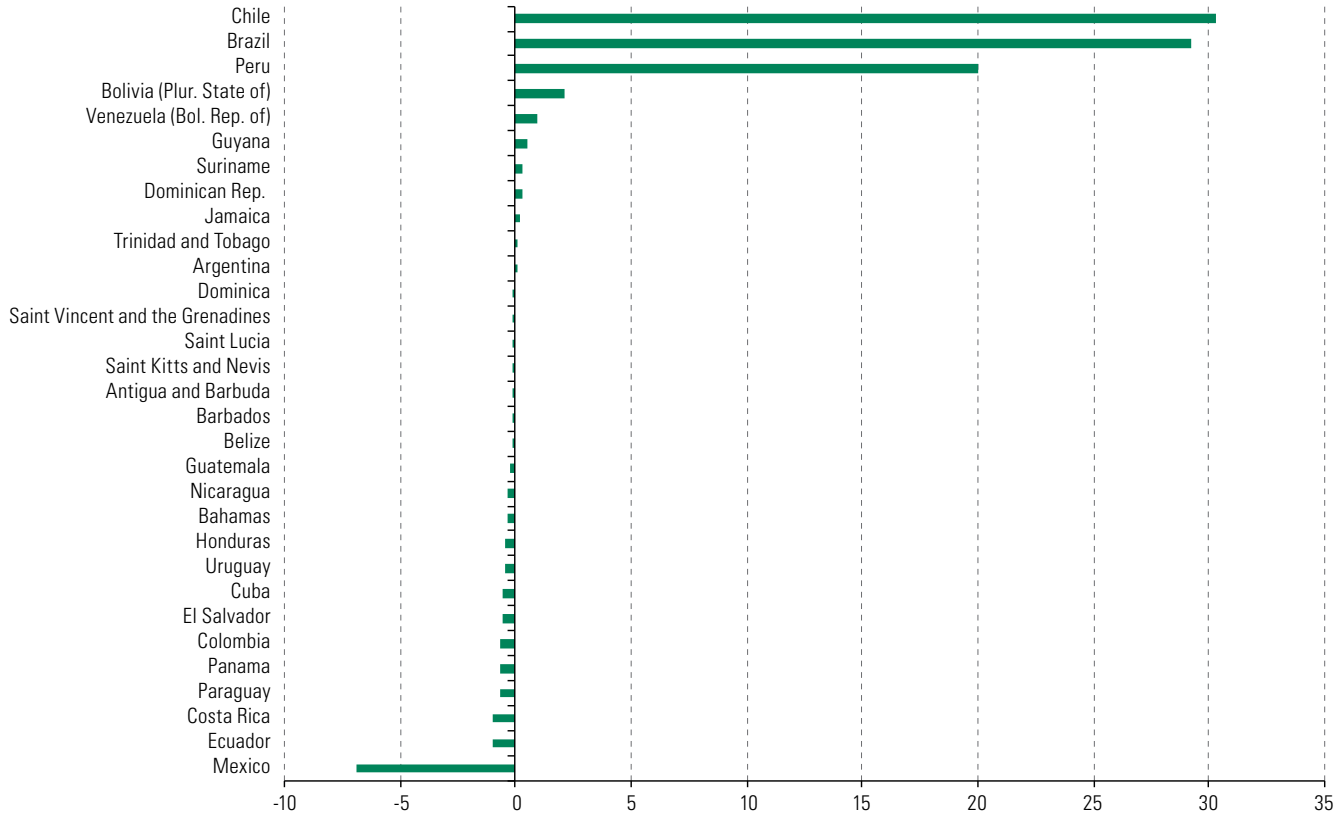
Table II.4
Latin America and the Caribbean: annual averages for the top 20 export products in the minerals and metals sector, 2015-2017[a]
(Billions of dollars and percentages)

Rank	Product description	Amount exported	Share of mineral and metal exports	Share of total goods exports
1	Copper ores and concentrates	27.681	18.4	3.0
2	Gold (including gold plated with platinum), unwrought (but not powder)	18.452	12.3	2.0
3	Cathodes and sections of cathodes of refined, unwrought copper	16.744	11.2	1.8
4	Agglomerated iron ores and concentrates	13.959	9.3	1.5
5	Zinc ores and concentrates	3.354	2.2	0.4
6	Non-monetary gold (including gold plated with platinum)	3.235	2.2	0.4
7	Aluminium oxide	2.951	2.0	0.3
8	Iron ores and non-agglomerated concentrates	2.872	1.9	0.3
9	Lead ores and concentrates	2.812	1.9	0.3
10	Unwrought silver (including silver plated with gold or platinum)	2.691	1.8	0.3
11	Semi-finished bars and rods of iron or non-alloy steel	2.431	1.6	0.3
12	Unrefined copper; copper anodes for electrolytic refining	2.207	1.5	0.2
13	Silver ores and concentrates	2.040	1.4	0.2
14	Ferroniobium, in granular or powdered form	1.503	1.0	0.2
15	Seamless iron (excluding cast iron) casing tubes	1.465	1.0	0.2
16	Other articles of iron or steel	1.264	0.8	0.1
17	Flexible tubing of base metal, with or without fittings, of iron or steel	1.194	0.8	0.1
18	Articles of jewellery	1.056	0.7	0.1
19	Copper waste and scrap	1.054	0.7	0.1
20	Ferronickel in granular or powder form	0.917	0.6	0.1
	Total for the top 20 products	**109.882**	**73.2**	**12.0**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.
[a] Six-digit level of the Harmonized Commodity Description and Coding System.

Three of the region's countries, all in South America (Brazil, Chile and Peru), have particularly large trade surpluses in the minerals and metals sector. At the other extreme, Mexico has by far the largest deficit in absolute terms. The other countries of the region do not have large deficits or surpluses in the sector. In fact, in the three-year period from 2015 to 2017, all except the Plurinational State of Bolivia stood somewhere in a range between an average surplus of US$ 1 billion and an average deficit of the same size (see figure II.9).

Figure II.9
Latin America and the Caribbean (31 countries): trade balances in the minerals and metals sector by country, averages for 2015-2017
(Billions of dollars)

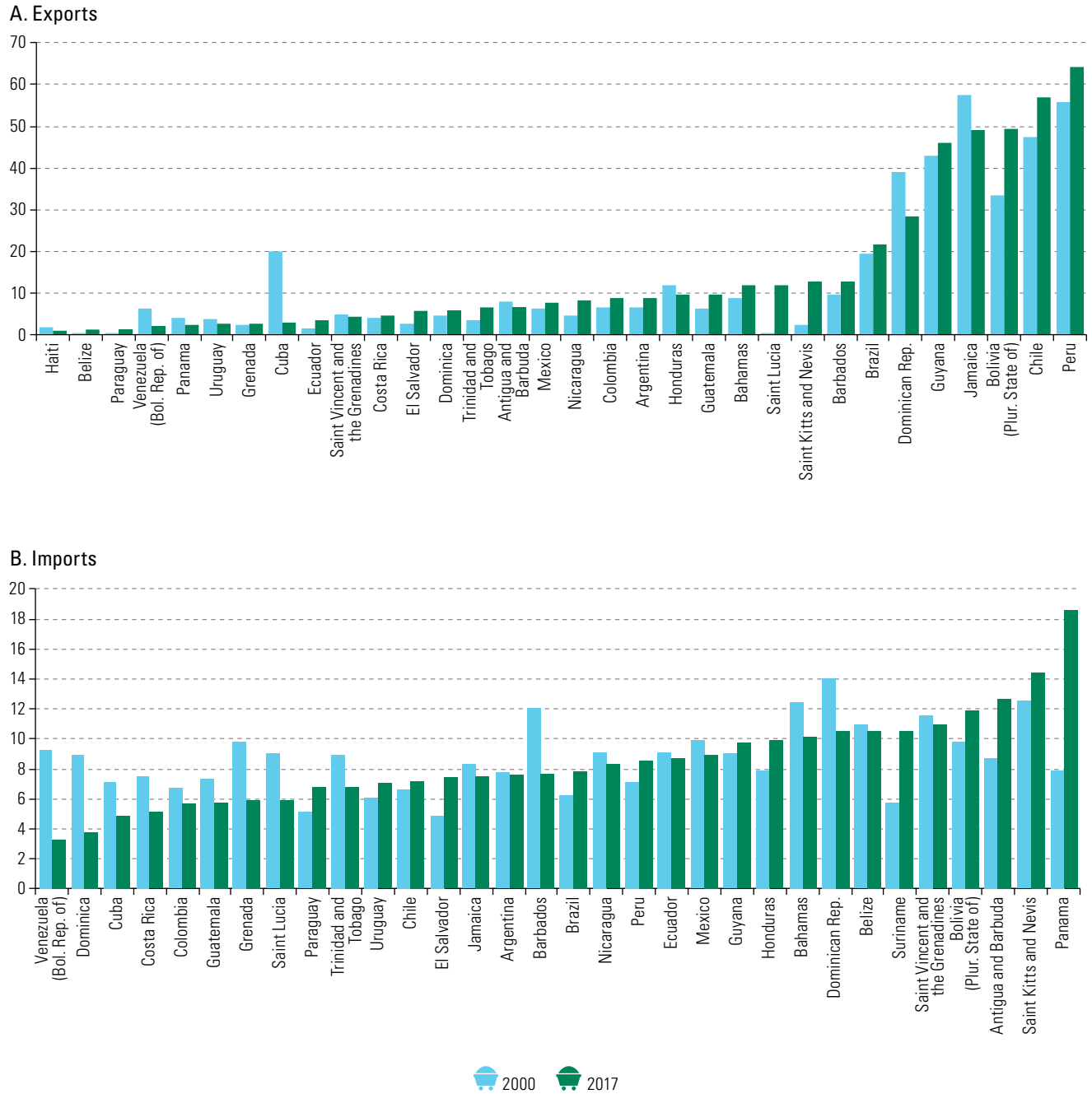


Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Chile and Peru are the only countries in the region where the mining and metals sector accounts for over half of total goods exports by value. The sector's share is also high, though, in the Plurinational State of Bolivia, Guyana and Jamaica (between 40% and 50%) and in Brazil and the Dominican Republic (between 20% and 30%). Its share of goods exports is around 12% in four countries, all in the Caribbean (Bahamas, Barbados, Saint Kitts and Nevis and Saint Lucia), while in all the others it is below 10% (see figure II.10A). These proportions have not altered significantly since 2000. The only exception has been Cuba, whose exports of minerals and metals fell drastically because of the iron and steel industry crisis following the ending of programmes of cooperation with the former socialist countries (ECLAC, 2000).

The situation with imports is also heterogeneous, although with much less dispersion from one country to another: the share of the mining and metals sector in total goods imports ranges from 3% in the Bolivarian Republic of Venezuela to 19% in Panama (see figure II.10B). On the whole, the countries in which this sector accounts for the largest shares of total imports are in the Caribbean and Central America.

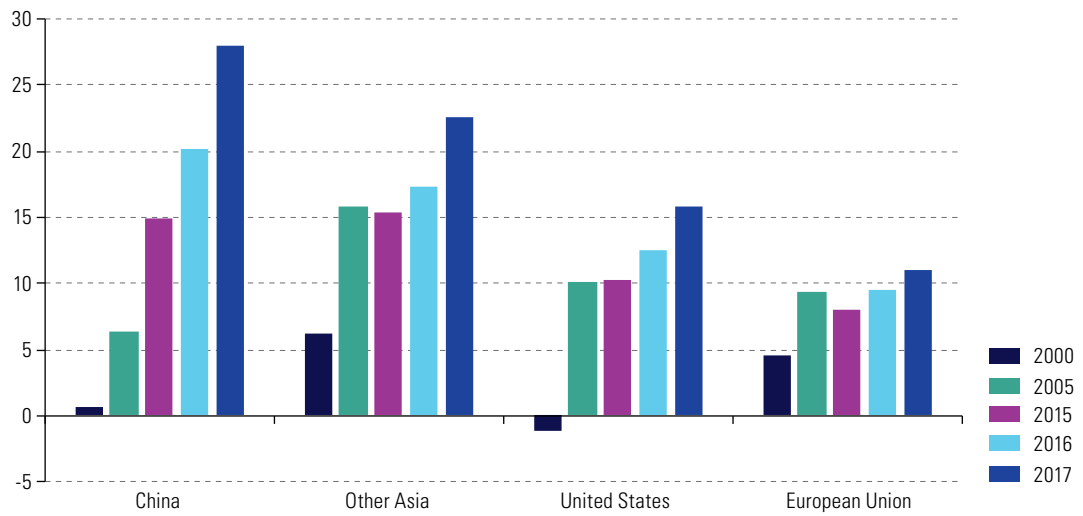
Figure II.10
Latin America and the Caribbean (32 countries): mining and metals sector share of overall trade in goods, 2000 and 2017[a]
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.
[a] Includes estimates of mirror flows for 2017 in the cases of the Bolivarian Republic of Venezuela, Cuba and Haiti.

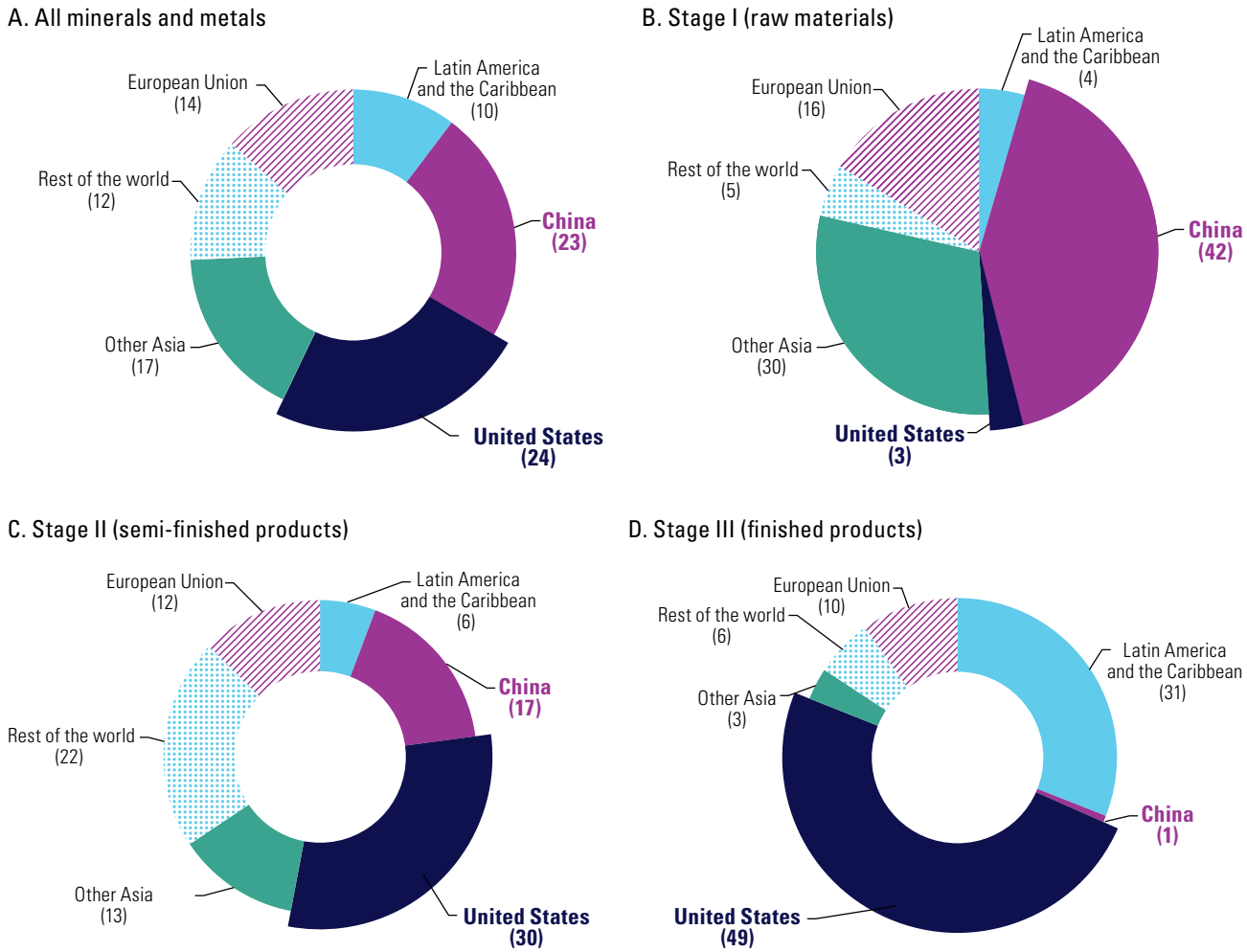
Latin America and the Caribbean runs trade surpluses in the minerals and metals sector with all its main partners. The largest are with China and the rest of Asia, and these have increased sharply since 2000 (see figure II.11). The main destinations for the region's mineral and metal exports vary greatly with the degree of processing. If the sector's total exports are considered, the main destinations are China and the United States, each taking around a quarter of the total value exported. In the case of raw materials, however, China and the rest of Asia absorb over 70% of the value exported, while the shares of the United States and the region itself are very small. In the case of semi-finished products, the United States is the main individual destination with a 30% share, equivalent to the sum of the shares of China and the rest of Asia. This pattern is heightened in the case of finished products: the United States and the region itself absorb about a half and a third of shipments, respectively, while the share of China and the rest of Asia is marginal (see figure II.12). In short, the relative importance of Asia declines as the degree of processing of the products exported rises, while the opposite is true of shipments to the United States and the region itself.

Figure II.11
Latin America and the Caribbean: trade balance in the minerals and metals sector by major destinations, 2000, 2005 and 2015-2017
(Billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Figure II.12
Latin America and the Caribbean: distribution by destinations of mineral and metal exports, by degree of processing, averages for 2015-2017
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Latin America and the Caribbean runs large surpluses in the copper, precious metals, zinc, and lead and uranium clusters. With the exception of lead and uranium, these are mainly concentrated in South America (see table II.5). Conversely, the region runs deficits of between US$ 2.1 billion and US$ 3.2 billion in the bauxite and aluminium, various metals and non-metallic minerals sectors. By subregion, Central America runs deficits in iron and steel, various metals, bauxite and aluminium, non-metallic minerals and copper that are not fully offset by its surpluses in precious metals, lead and uranium, zinc and nickel. In the Caribbean, surpluses for precious metals, bauxite and aluminium, and nickel almost offset deficits in other sectors, mainly iron and steel, various metals and non-metallic minerals. For its part, Mexico runs a large trade deficit in iron and steel and in bauxite and aluminium, which are inputs for its metallurgical, automotive and electronics industries.

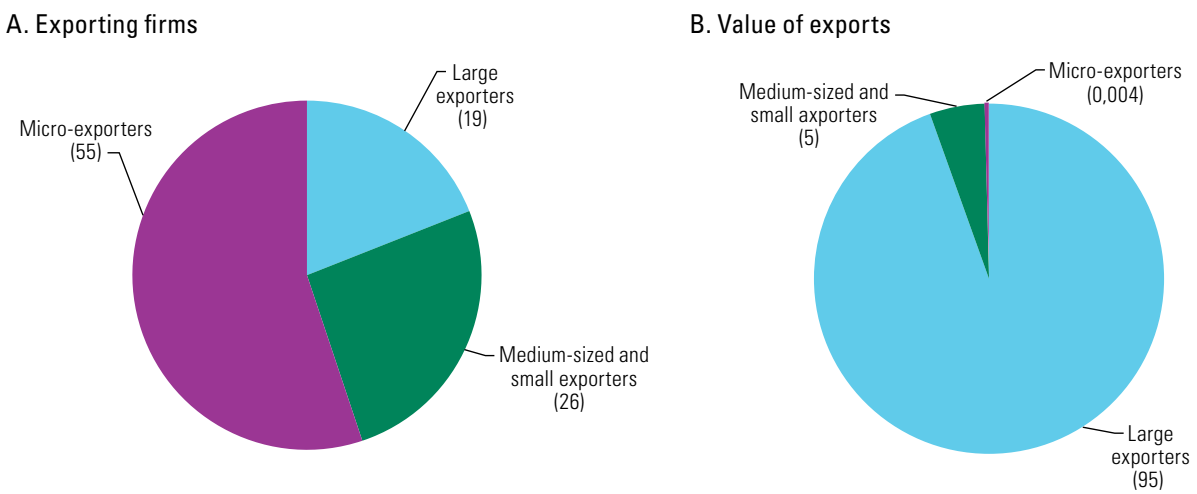
Table II.5
Latin America and the Caribbean, subregions and Mexico: minerals and metals trade balance by cluster, averages for 2015-2017
(Percentages of the total and millions of dollars)

Cluster	Share of regional goods trade		Trade balance by cluster and subregion				
	Exports	Imports	South America	Mexico	Central America	The Caribbean	Latin America and the Caribbean
Copper	5.3	0.7	42 749	649	-101	-6	43 292
Precious metals	3.3	0.2	18 555	6 513	710	2 307	28 085
Zinc	0.5	0.1	2 994	1 039	16	-7	4 041
Lead and uranium	0.4	0.1	1 215	1 322	287	-7	2 817
Tin	0.1	0.0	802	-107	-88	-9	598
Iron and steel	4.3	4.2	14 105	-11 130	-1 795	-1 664	-484
Nickel	0.0	0.0	52	-181	73	131	75
Bauxite and aluminium	0.8	1.1	1 732	-4 047	-241	427	-2 130
Various metals	1.0	1.3	520	-1 643	-685	-487	-2 295
Non-metallic minerals	1.0	1.2	-1 945	106	-520	-851	-3 209
Total minerals and metals	**16.7**	**8.8**	**80 780**	**-7 480**	**-2 344**	**-165**	**70 790**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Regional exports of minerals and metals show a high degree of concentration among a few firms. On the basis of information for 2015 from the customs services of Brazil, Chile, Colombia, Ecuador, Mexico and Peru, large firms are found to have accounted for 95% of the total value of mineral and metal exports from these six countries, even though they make up only 19% of all firms exporting in the sector (see figure II.13).

Figure II.13
Latin America (6 countries): distribution of mineral and metal exports by size of exporting firms, 2015[a]
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of information from the Ministry of Industry, Foreign Trade and Services of Brazil, the Directorate of National Taxes and Customs (DIAN) of Colombia, the National Customs Department of Chile, the National Customs Department of Ecuador (SENAE), the National Institute of Statistics and Geography (INEGI) of Mexico and the National Tax and Customs Administration (SUNAT) of Peru.

[a] Each country's official definitions, based on total sales, were used to segment firms by size. The exception was Mexico, where large exporters were taken to be those exporting over US$ 25 million, medium-sized and small exporters those exporting between US$ 1 million and US$ 25 million, and micro-exporters those exporting less than US$ 1 million.

The tin and nickel clusters present the greatest concentration, with just five firms accounting for more than 90% of each group's total exports. These are mainly firms from Peru, Mexico and Brazil in the case of tin and from the two latter in the case of nickel. The lead and uranium cluster and the zinc cluster also exhibit high concentration, with 10 large exporters accounting for over 80% of the export total (see table II.6).

Table II.6
Latin America (6 countries): shares of large enterprises in mineral and metal exports by cluster, 2015
(Percentages)

Cluster	Large enterprise share		Share of total exports by value		
	Of all exporting firms	Of the total value exported	Top 5 exporters	Top 10 exporters	Top 20 exporters
Non-metallic minerals	19.2	73.4	24.9	37.2	51.1
Copper	39.9	99.0	43.6	60.9	79.3
Tin	52.8	92.0	91.1	91.8	91.9
Iron and steel	24.7	94.8	62.7	72.3	81.8
Bauxite and aluminium	32.2	86.3	48.0	55.5	66.7
Nickel	51.0	97.5	94.5	97.0	97.4
Zinc	51.4	98.7	62.7	80.6	93.2
Lead and uranium	41.8	96.8	75.2	85.4	93.8
Precious metals	29.1	95.1	33.5	43.4	56.7
Various metals	24.5	90.0	32.3	45.4	61.9
Minerals and metals	**19.0**	**94.5**	**30.7**	**41.5**	**52.9**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of information from the Ministry of Industry, Foreign Trade and Services of Brazil, the Directorate of National Taxes and Customs (DIAN) of Colombia, the National Customs Department of Chile, the National Customs Department of Ecuador (SENAE), the National Institute of Statistics and Geography (INEGI) of Mexico and the National Tax and Customs Administration (SUNAT) of Peru.

The mining firms with the largest exports include Techint, Tenaris and Ternium in Argentina; Vale do Rio Doce, ArcelorMittal Brasil, Alunorte, Gerdau, Companhia Brasileira de Metalurgia e Mineração and Samarco Mineração in Brazil; the Corporación Nacional del Cobre de Chile (CODELCO), Escondida, Antofagasta Minerals and Los Pelambres in Chile; Grupo México and Industrias Peñoles in Mexico; Cerro Matoso in Colombia and Sociedad Minera Cerro Verde, Antamina, Southern Copper Corporation and Las Bambas in Peru. They all occupy the leading positions in the sales and export rankings of their respective countries and are among the top 500 firms in Latin America (Mercados & Estratégias, 2017; Minería del Perú, 2017; Naranjo, 2017; EXAME, 2017; EXPANSION, 2018).

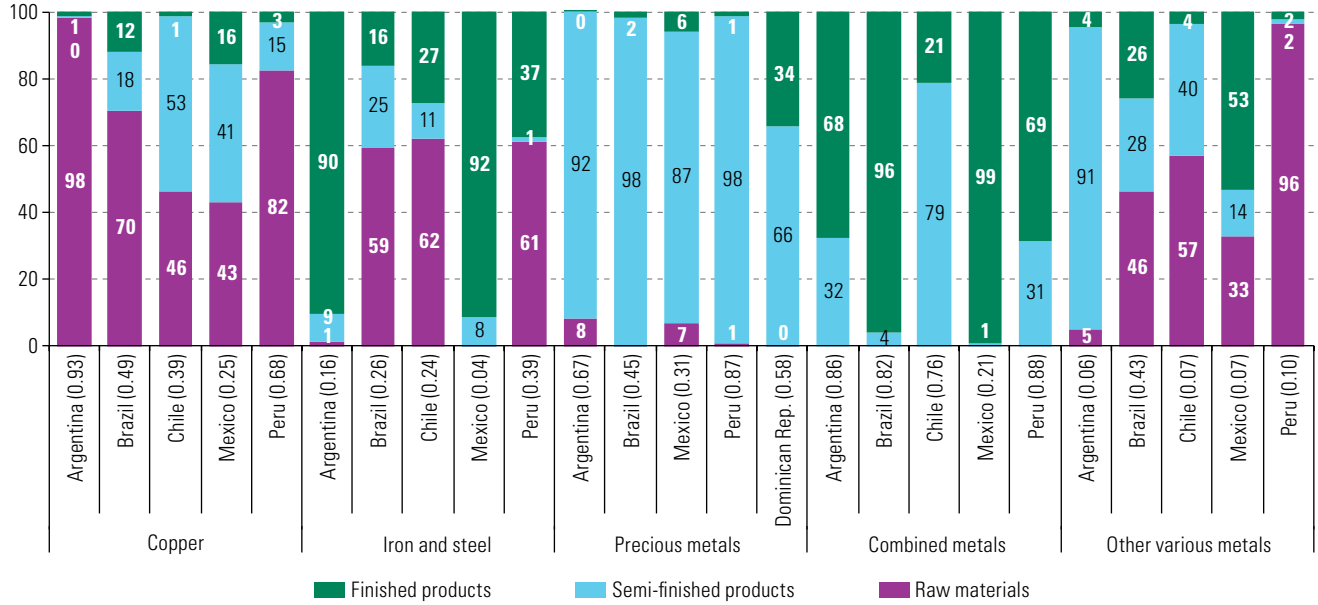
2. The region's main export clusters

The export performance of the region's four leading minerals and metals clusters (copper, iron and steel, precious metals and various metals) will now be analysed in more detail. In the case of various metals, a distinction is made between combined metal products and other various metals. In each instance, the main exporting countries, the composition of exports by the degree of processing and the main destination markets are considered. Estimates of export employment intensity in the different clusters are included where the available data permit.

The structure of exports by degree of processing shows that Mexico presents a larger proportion of finished products than the other main exporting countries in all four clusters. This is reflected in the greater diversification of Mexican exports, as measured

by the normalized Herfindahl-Hirschman index (HHI).[2] The share of raw materials is greater in the copper, iron and steel, and other various metals clusters, while shipments of precious metals and combined metals by the region's leading exporters usually consist mainly of semi-finished and finished products, respectively (see figure II.14).

Figure II.14
Latin America (selected countries): structure and concentration indicators for exports by the main minerals and metals clusters, averages for 2015-2017[a]
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.
[a] The figures in brackets indicate the normalized Herfindahl-Hirschman index of exports for each country in each cluster.

In particular, the high proportion of finished products in the combined metals exports of Brazil and Mexico reflects the greater industrial capacity of the region's two largest economies. The situation with other various metals is very heterogeneous from one country to another: whereas in Mexico finished products account for over half of shipments by value, in Peru almost all exports are commodities and in Argentina over 90% are semi-finished products.

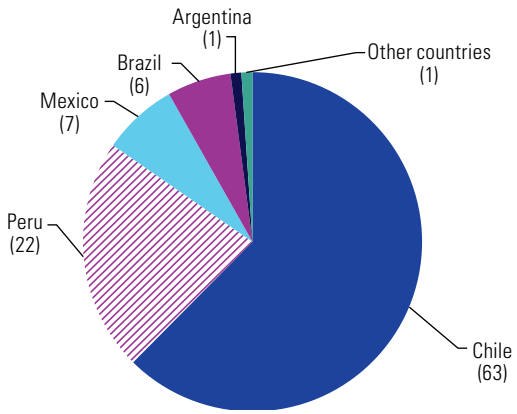
(a) The copper cluster

Copper is a metal with a wide variety of applications. Semi-finished copper (cathodes and anodes, copper concentrates in blister form) is used in the iron and steel industry to produce electrical cables, tubes and rods, among other intermediate products that are inputs for the electronics, automotive and construction industries, among others. Its antiseptic properties also mean that it is used for surfaces with heavy human traffic (public transport, hospital, airports, etc.) and in the food industry (to build cages for aquaculture, for example). On a small scale, it is used particularly in jewellery.

[2] The normalized Herfindahl-Hirschman index (HHI) measures the diversification or concentration of each country's export basket, considering the number of products making up each cluster. A value of 1 indicates maximum concentration, a value below 0.10 indicates diversification, and a range of between 0.10 and 0.18 is interpreted as "moderate concentration".

Chile and Peru between them account for 85% of regional exports in the copper cluster (see figure II.15). Copper products' share of total goods exports is close to half in Chile and 30% in Peru. In both countries, raw materials and semi-finished products account for almost the entirety of the cluster's shipments (see table II.7).

Figure II.15
Latin America and the Caribbean: composition of copper cluster exports by country of origin, averages for 2015-2017
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Table II.7
Latin America and the Caribbean: main copper cluster exporters, averages for 2015-2017
(Millions of dollars and percentages)

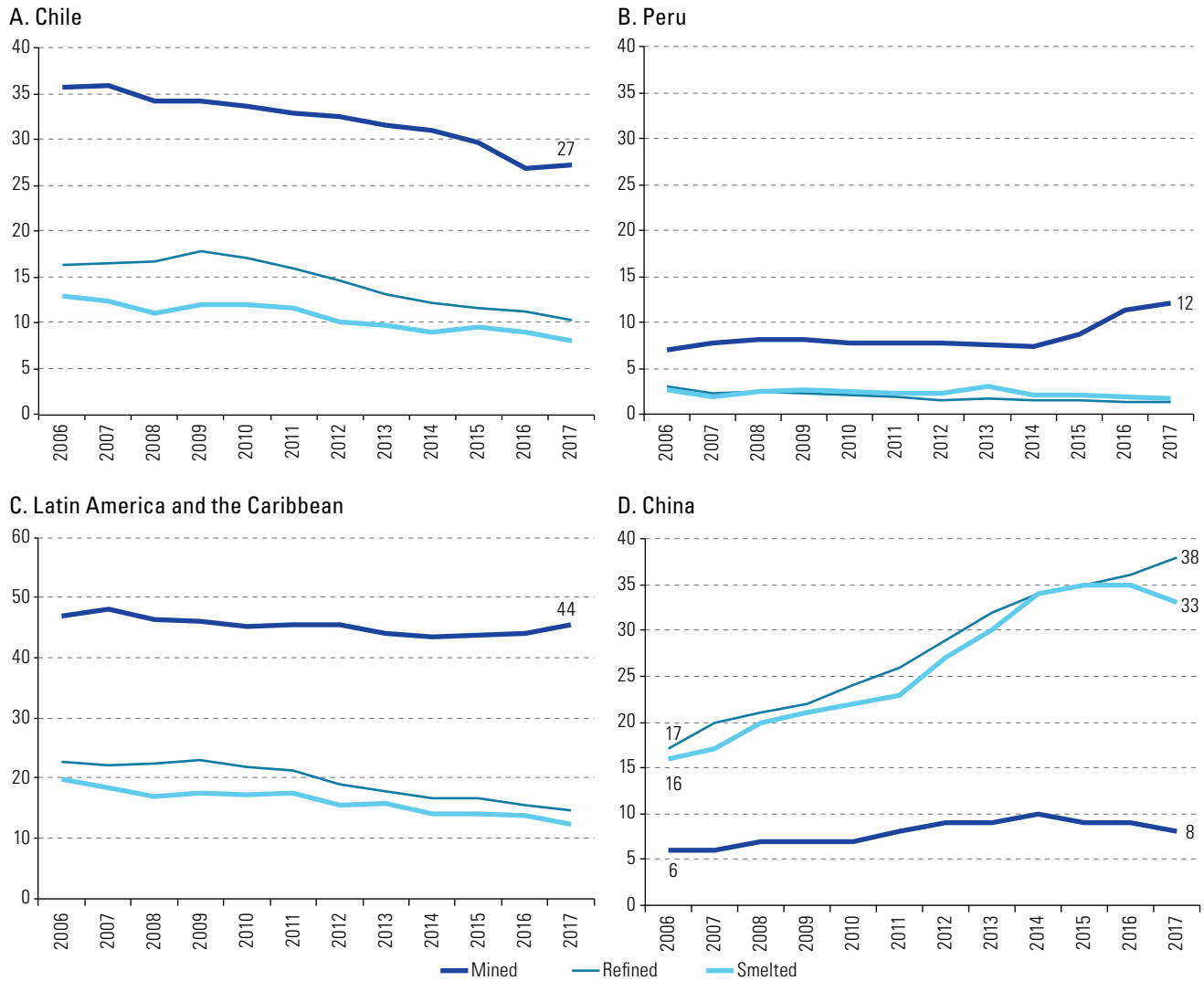
Country	Raw materials	Semi-finished products	Finished products	Total cluster exports	Total goods exports	Cluster share of total goods exports
Chile	14 333	16 392	382	31 106	63 694	48.8
Peru	9 110	1 628	336	11 073	37 770	29.3
Mexico	1 489	1 429	660	3 578	387 994	0.9
Brazil	2 133	543	367	3 042	198 034	1.5
Argentina	504	2	7	513	57 635	0.9
Other countries	131	367	25	523	187 469	0.3
Latin America and the Caribbean	**27 699**	**20 360**	**1 776**	**49 835**	**932 596**	**5.3**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Chile and Peru are the world's largest producers of mined copper and have the largest reserves (21.5% and 10.3% of global reserves, respectively). Despite this, both (and especially Peru) are laggards when it comes to increasing the degree of processing of their exports. In addition, they face growing competition from China in the production of smelted and refined copper. China already has a 38% share of the world's output of refined copper, double Latin America's (see figure II.16).

In the case of Chile, the region's largest exporter, exports of semi-finished products predominate (53%), mainly copper cathodes and anodes for electrorefining. Finished products (copper wires, bars and profiles, copper plates, tubes and twisted cables, among others) account for barely 1% of the cluster's shipments. Chilean exports of crude copper and semi-finished products mainly go to China and the rest of Asia (38% and 31%, respectively); 13% go to the European Union, 7% to the United States and less than 6% to Latin America. Conversely, the region absorbs 78% of Chile's exports of finished products. Peru's exports are heavily dominated by exports of crude copper (82%), with China and other Asian countries as the main destinations (62% and 20%, respectively). The combined share of semi-finished and finished products in Peru's total shipments is very low in comparison with other copper-exporting countries in the region.

Figure II.16
Chile, Peru, Latin America and the Caribbean and China: share of global copper output by type, 2006-2017
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of information from the World Bureau of Metal Statistics (WBMS).

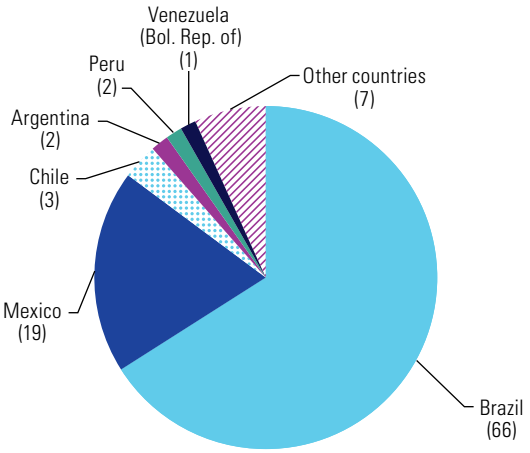
(b) The iron and steel cluster

Iron ore is the main input for the foundry industry, which uses it to produce pig iron and sponge iron. In turn, the steel industry combines these products with carbon and other elements to produce different varieties of steel, mainly semi-finished and finished products (slabs, flat, non-flat and tubular steels, wires, etc.). Steel in its different forms is used in a wide array of industries, especially the machinery and tools, electronics, automotive, aerospace, shipbuilding and construction industries.

Brazil heavily dominates the exports of the region's iron and steel cluster, with two thirds of the total, followed by Mexico with almost a fifth. No other country's export share exceeds 3% (see figure II.17). Almost 60% of Brazilian shipments by value in this cluster are raw materials (iron ore) and around 25% are semi-finished products such as ferroalloys, unalloyed blocks of iron and ferronickel, etc. Conversely, 92% of exports from the Mexican cluster are finished products (iron and steel tubes,

iron and steel structures, articles of forged steel, iron and steel bars and rods, wires, kitchen appliances, etc.). Chile's export structure is similar to Brazil's, while Argentina's resembles Mexico's (see table II.8).

Figure II.17
Latin America and the Caribbean: composition of exports in the iron and steel cluster by country of origin, averages for 2015-2017
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Table II.8
Latin America and the Caribbean: main exporters in the iron and steel cluster, averages for 2015-2017
(Millions of dollars and percentages)

Country	Raw materials	Semi-finished products	Finished products	Total cluster exports	Total goods exports	Cluster share of total goods exports
Brazil	15 522	6 469	4 256	26 246	198 034	13.3
Mexico	3	640	6 984	7 627	387 994	2.0
Chile	832	141	364	1 337	63 694	2.1
Argentina	7	48	616	671	57 635	1.2
Peru	376	7	231	614	37 770	1.6
Venezuela (Bolivarian Republic of)	249	317	25	590	34 263	1.7
Other countries	126	1 248	1 312	2 686	153 206	1.8
Latin America and the Caribbean	**17 115**	**8 869**	**13 787**	**39 772**	**932 596**	**4.3**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Between 2015 and 2017, iron ore exports from Brazil went mainly to China and the rest of Asia (52% and 21%, respectively). Meanwhile, the regional market and that of the United States were the largest ones for shipments of semi-finished and finished products (22% and 29%, respectively). In the case of Mexico, the distribution of the cluster's exports follows a pattern determined largely by geography, as the United States is the main destination (78%), followed by the region itself (12%). This highlights Mexico's participation in the North American manufacturing system as a supplier of inputs for the automotive, electronics and other industries (Durán Lima and Zaclicever, 2013). Brazilian and Mexican exports to the markets of the region and the United States are facing growing competition from China, particularly as regards semi-finished intermediate goods (long rolled steels, flat steels, tubes, wires, etc.) and capital goods with a high steel content (Durán Lima and Pellandra, 2017).

In the region, there are countries that are net importers of products in the cluster (particularly raw materials and some semi-finished products), which have a direct impact on gross fixed capital formation (particularly in the construction and metallurgy sectors). A number of these countries process the products they import and then export semi-finished and finished products from the cluster, mainly within their own subregions. This is the case with Central America and the Caribbean, which absorb 67% and 40%, respectively, of their own iron and steel cluster exports.

In 2017, Latin America and the Caribbean ran a trade deficit with China of US$ 23.4 billion in the steel value chain (which includes raw materials such as iron ore, steels and manufactured products with a high steel content). This figure is mainly explained by the large deficit in the automotive, machinery and equipment and office machinery industries, far exceeding the region's surplus in raw materials. The countries with the largest deficits are Colombia, Ecuador, Mexico and Peru (ALACERO, 2018). Chinese competition thus poses a major challenge to the development of intraregional value chains in this cluster.

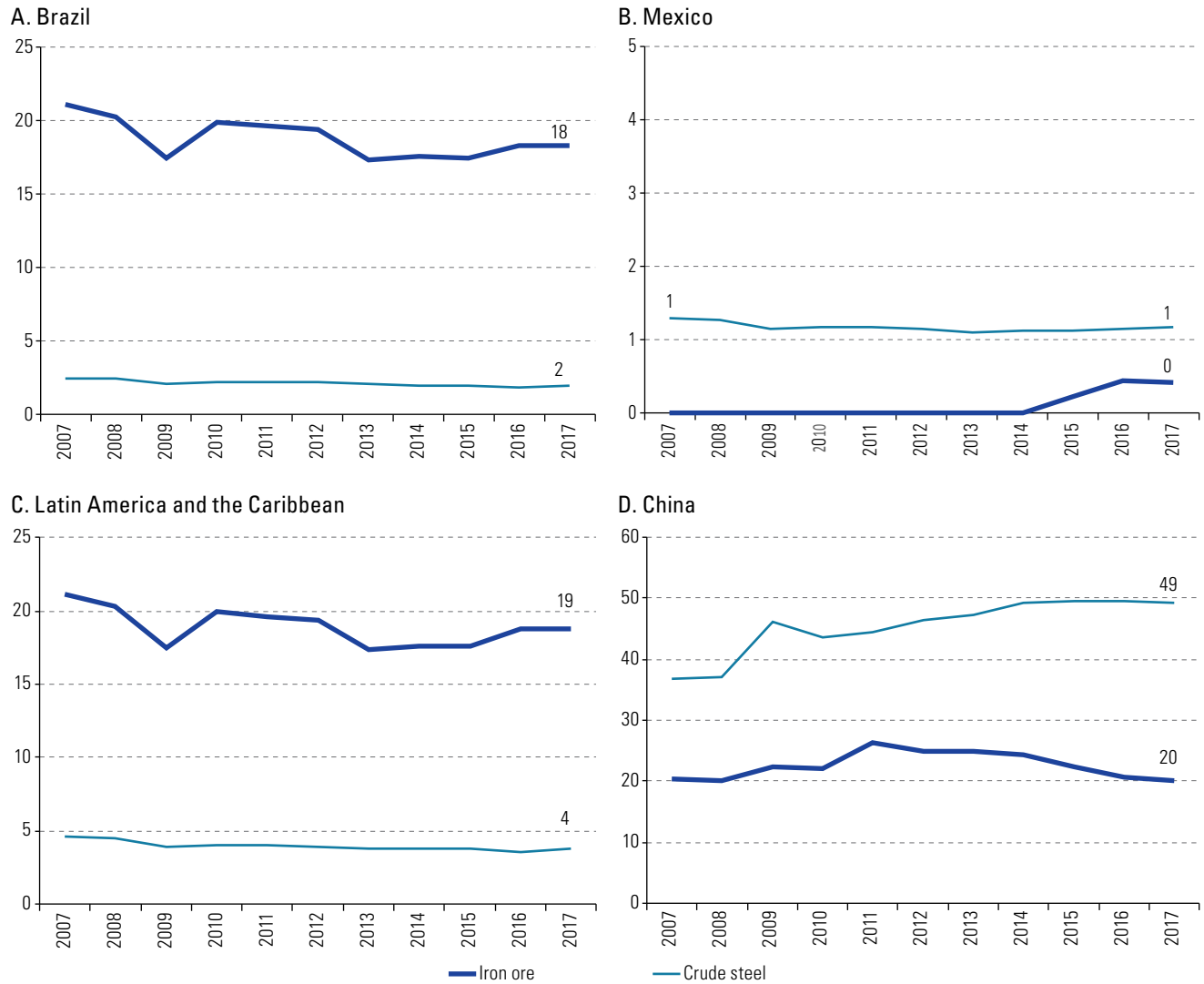
The iron and steel sector is characterized by a high index of direct and indirect job creation. Using input-output tables for 2005 and 2011 in South America, it was possible to determine that the sector's direct employment requirements were equivalent to three and a half times those of all minerals and metals sectors combined (206 employees for every US$ 1 million produced, as compared to 59 for all minerals and metals sectors). For every direct job created by the iron and steel sector in South America, meanwhile, at least three indirect jobs are calculated to have been created in other sectors of the economy (mainly energy and non-energy mining, transport, coke and fuels, and other services). Around 2016, seven of the largest firms in the iron and steel sectors of Argentina, Brazil and Mexico had a combined workforce of just over 150,000, which confirms the importance of the sector as an employer.

Notwithstanding its great demand for workers, the iron and steel industry is very capital-intensive, meaning that it requires large volumes of production to achieve economies of scale. This contributes to the sector's high degree of concentration among a few firms. In 2015, the 5 main exporting firms accounted for 63% of the cluster's shipments in 6 countries of the region, and the 20 main exporters for 82% (see table II.6). Investments by metallurgical enterprises operating globally, such as ArcelorMittal, have been concentrated in Brazil, which possesses 13.5% of proven world iron ore reserves. Brazil also has world-class firms of its own. Indeed, three Brazilian firms (Vale, Gerdau and Companhia Siderúrgica Nacional) are high in the world ranking of publicly listed mining companies (Naranjo, 2017). However, Brazil's share of global steel production is very small compared to that of China, which now accounts for almost half of global output (see figure II.18).

(c) The precious metals cluster

Precious metals occur in a pure state in nature (i.e., uncombined with other metals) and have a high economic value because of their scarcity. This group includes gold, silver, platinum, rhodium and palladium. Precious metals have been used since ancient times as a store of value and in the manufacture of jewellery. They also have numerous industrial applications. For example, silver is a basic input in the photography and electronics industries, while platinum is employed in the chemical industry, in the manufacture of laboratory equipment, in electronics and in dentistry, among other applications. Palladium is employed in watchmaking, electronics, dentistry and the production of surgical instruments, among other uses.

Figure II.18
Brazil, Mexico, Latin America and the Caribbean and China: share of global output of crude steel and iron ore, 2007-2017
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of information from the World Steel Association and the Latin American Steel Association (ALACERO).

Mexico and Peru are the region's main exporters in this cluster. Each accounts for about a quarter of total shipments by value (see figure II.19). The bulk of shipments from both countries are of semi-finished products, such as gold plated with platinum, diamond powder, silver powder and metals faced with gold. This pattern is seen in all 15 of the countries exporting the most precious metals in the region except Guatemala, 81% of whose exports are of raw gold. Of the top 15 exporting countries, precious metals represent 20% or more of total goods exports in 5: the Dominican Republic, Guyana, Peru, the Plurinational State of Bolivia and Suriname (see table II.9).

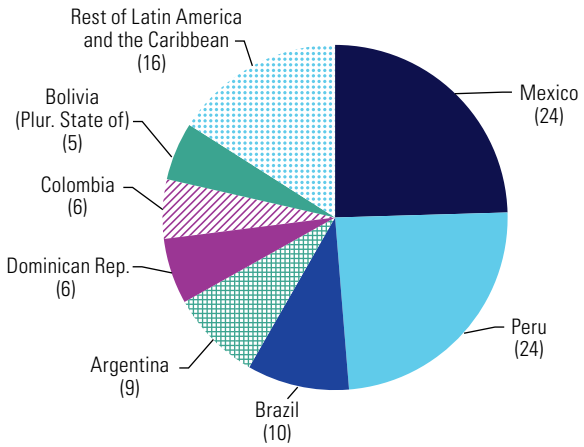


Figure II.19
Latin America and the Caribbean: composition of exports in the precious metals cluster by country of origin, averages for 2015-2017
(Percentages)

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Mining for precious metals is an economic activity of great importance, especially in the Andean and Central American countries, where informal (and sometimes illegal) small-scale mining, especially for gold, is very common. It is estimated that about 28% of the gold extracted in Peru, 30% in the Plurinational State of Bolivia, 77% in Ecuador, 80% in Colombia and between 80% and 90% in the Bolivarian Republic of Venezuela is produced illegally (The Global Initiative against Transnational Organized Crime, 2016). Illegal gold mining employs hundreds of thousands of workers across the region. In addition, the small-scale extraction techniques employed involve discharges of large amounts of mercury and cyanide, with the consequent pollution of water and soil and the harmful effects of this on human health and the environment.

Table II.9
Latin America and the Caribbean: leading exporters of precious metals, averages for 2015-2017
(Millions of dollars and percentages)

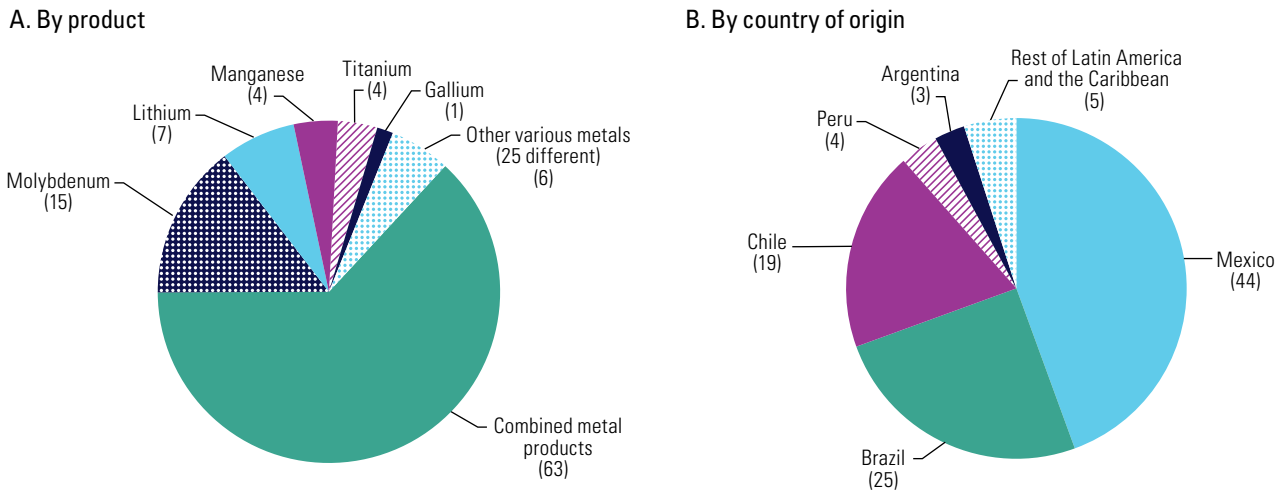
Country	Raw materials	Semi-finished products	Finished products	Total cluster exports	Total goods exports	Cluster share of total goods exports
Mexico	513	6 578	446	7 537	387 994	1.9
Peru	561	6 784	82	7 426	37 770	19.7
Brazil	1	2 883	57	2 942	198 034	1.5
Argentina	217	2 417	1	2 635	57 635	4.6
Dominican Republic	0	1 495	393	1 888	8 662	21.8
Colombia	0	1 702	6	1 708	34 834	4.9
Bolivia (Plurinational State of)	602	931	138	1 670	7 887	21.2
Venezuela (Bolivarian Republic of)	0	1 289	1	1 290	34 263	3.8
Chile	58	940	1	999	63 694	1.6
Guyana	0	565	7	573	1 294	44.3
Suriname	0	527	0	527	1 338	39.4
Ecuador	31	372	0	403	18 084	2.2
Nicaragua	0	345	8	354	3 663	9.7
Guatemala	196	44	3	243	10 820	2.2
Honduras	10	158	0	168	4 278	3.9
Other countries	5	263	89	357	62 347	0.6
Latin America and the Caribbean	**2 195**	**27 293**	**1 233**	**30 721**	**932 596**	**3.3**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

(d) The various metals cluster

Between 2015 and 2017, the various metals category accounted for an average of 1.1% of the region's total goods exports. Brazil, Chile and Mexico were the source of 88% of the cluster's total exports. The cluster combines two product groups. The first includes combined metal products, i.e., semi-finished and finished goods containing more than one of the metals included in other clusters. This group accounts for 63% of the cluster's total shipments. The second group is that of various metals proper (molybdenum, lithium, manganese and titanium, among others), accounting for the other 37% of shipments (see figure II.20 and table II.10).

Figure II.20
Latin America and the Caribbean: composition of exports in the various metals cluster by product and country of origin, averages for 2015-2017
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Table II.10
Latin America and the Caribbean: leading exporters in the various metals cluster, averages for 2015-2017
(Millions of dollars and percentages)

Country	Combined metal products	Other various metals	Total cluster exports	Total goods exports	Cluster share of total goods exports
Mexico	3 722	725	4 448	387 994	1.1
Brazil	1 868	637	2 505	198 034	1.3
Chile	349	1 555	1 905	63 694	3.0
Peru	61	304	365	37 770	1.0
Argentina	95	195	291	57 635	0.5
Panama	138	25	164	11 467	1.4
Colombia	88	37	125	34 834	0.4
Latin America and the Caribbean	**6 453**	**3 559**	**10 012**	**932 596**	**1.1**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

A number of the metals in the various metals cluster have uses across a wide array of activities such as electronics, robotics, the chemical industry, medicine and clean technologies. Demand for them will probably grow in the context of Industry 4.0, based on the digital transformation of production processes. Proven reserves of a number of them, such as antimony, lithium and niobium, are particularly high in the region (see table II.11).

Table II.11
Selected metals: industrial uses and applications, 2017

Metal	Automotive and aerospace industry	Electronics and robotics industry	Clean technologies in general	Chemical applications and medications	Medical implants	Proven reserves in Latin America[a] *(percentages of world total)*
Iron and steel	X	X	X			18.0
Aluminium	X	X	X			18.0
Antimony		X				53.8
Beryllium		X		X		…[b]
Cobalt			X	X	X	7.0
Copper		X	X	X		37.6
Chromium	X		X	X		…
Gallium		X	X			…
Indium		X				…
Lithium			X	X		59.7
Molybdenum	X	X	X	X		24.9
Manganese			X	X		18.3
Niobium	X	X				89.0
Silicon		X	X	X		…
Titanium	X				X	4.9
Tungsten	X	X		X		…
Vanadium						45.0
Zinc			X			23.0
Zirconium				X		…

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Los Alamos National Laboratory, "Periodic Table of Elements: LANL" [online] https://periodic.lanl.gov/list.shtml; United States Department of Energy, "Clean Energy" [online] https://www.energy.gov/science-innovation/clean-energy; Royal Society of Chemistry (RSC), "Periodic Table" [online] http://www.rsc.org/periodic-table/; and United States Geological Survey (USGS), *Mineral Commodity Summaries 2018* [online] https://minerals.usgs.gov/minerals/pubs/mcs/2018/mcs2018.pdf.

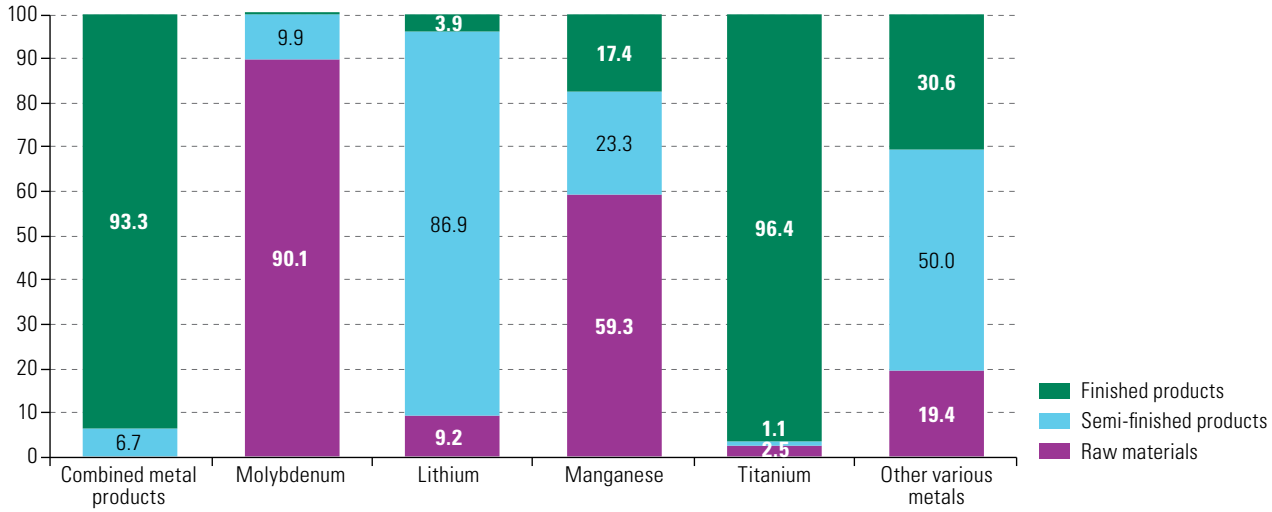
[a] Sum of shares of countries with information available.

[b] Three dots (…) indicate that data are not available or are not separately reported.

When the structure of the cluster's exports is analysed, it is found that combined products are highly processed (93% of the value exported is of finished products) and there is a high degree of variability across the different metals. Commodities dominate shipments of molybdenum and manganese. In the case of lithium, meanwhile, the bulk of shipments are semi-finished products (mainly lithium carbonate). Titanium is an outlier in that finished products account for almost the entirety of the value exported (see figure II.21). The region's main export markets for combined products are the countries of the region themselves. Argentina, Brazil and Chile send their exports to the rest of South America and, to a lesser extent, Central America, while Mexico sends them to the United States and Central America and, to a lesser extent, the European Union. In contrast to the situation with commodities in other clusters, such as iron and copper ore, China and the rest of Asia are not among the main destinations for shipments of combined metal products.

Meanwhile, regional shipments of molybdenum, lithium, manganese and titanium (the four most exported metals in the "other various metals" group) are very largely accounted for by a single main exporter of each: Chile in the cases of molybdenum and lithium, Brazil in the case of manganese and Mexico in the case of titanium (see figure II.22). Consistently with this pattern, molybdenum accounts for a large share of shipments from Chile and Peru, lithium of those from Argentina and Chile, titanium of those from Mexico and manganese of those from Brazil. However, about half of this last country's exports are other metals, such as gallium, vanadium, niobium, tantalum, silicon, cobalt and chromium (see table II.12).

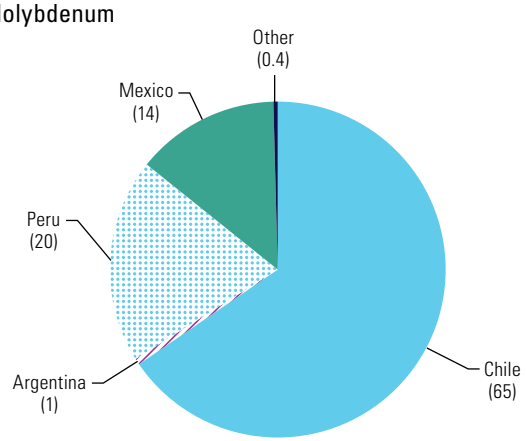
Figure II.21
Latin America and the Caribbean: composition of exports of combined metals products and other various metals by degree of processing, averages for 2015-2017
(Percentages)



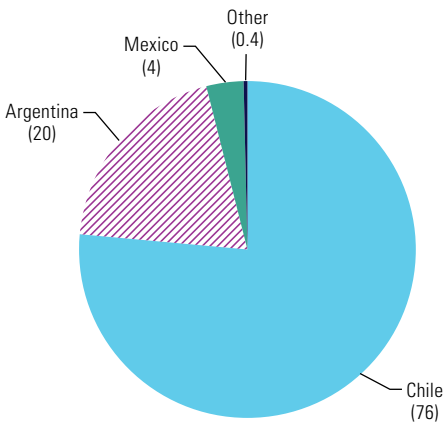
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Figure II.22
Latin America and the Caribbean: composition of exports of the main metals in the various metals cluster by country of origin, averages for 2015-2017
(Percentages)

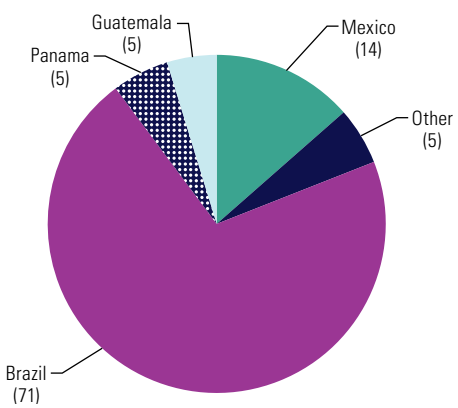
A. Molybdenum



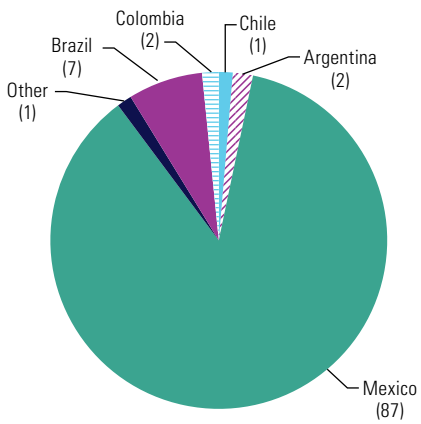
B. Lithium



C. Manganese



D. Titanium



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Table II.12
Latin America and the Caribbean: structure of exports of other various metals by type of metal and exporting country, averages for 2015-2017
(Percentages and millions of dollars)

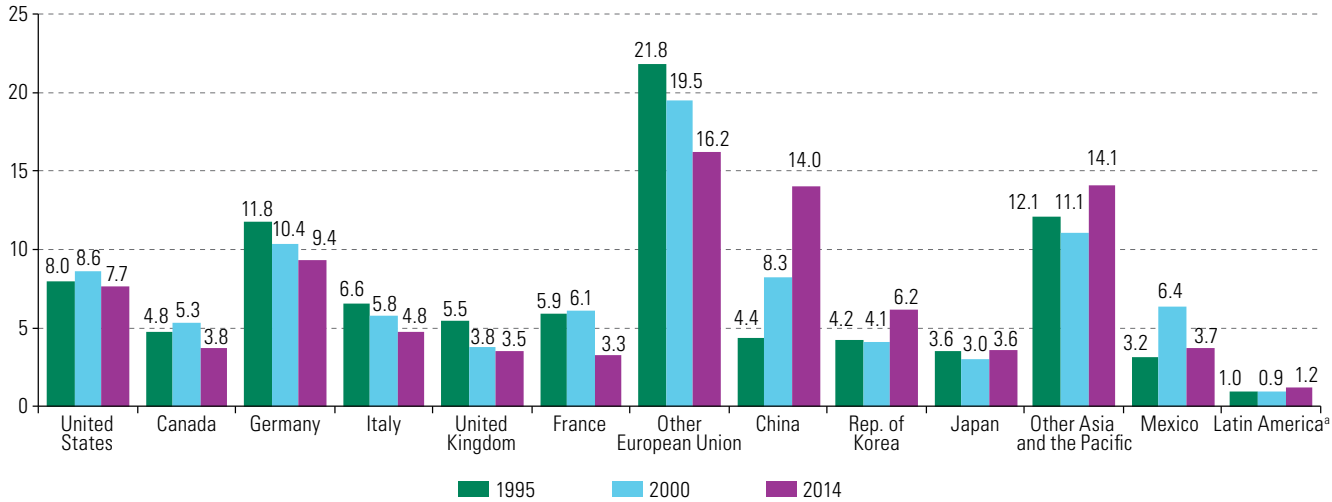
Country	Molybdenum	Lithium	Manganese	Titanium	Other various metals	Total
Chile	61.2	34.8	0.1	0.3	3.5	1 555
Mexico	27.7	3.5	8.1	44.4	16.3	725
Brazil	0.9	0.1	48.0	4.2	46.8	637
Peru	94.1	0.0	1.7	0.4	3.7	304
Argentina	4.5	71.3	0.1	3.7	20.5	195
Latin America and the Caribbean	**40.9**	**19.9**	**12.1**	**10.4**	**16.6**	**3 559**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

C. The region supplies mineral and metal commodities for the manufacturing exports of its partners

Analysing the minerals and metals sector from the perspective of global value chains shows that exports from China account for the greatest share of demand for imported inputs from this sector.[3] In 2014, the country absorbed 14% of the minerals and metals of foreign origin used in the production of manufacturing exports in the countries considered, as compared to 4% in 1995 (see figure II.23).[4] Between them, the countries of Asia and the Pacific increased their share from 24% to 38% in the period, while the share of the European Union dropped sharply (from 52% to 37%). The share of the seven Latin American countries considered in this analysis (Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico and Peru) was 5% in 2014 (4% in 1995) and was mainly accounted for by Mexico.

Figure II.23
Selected countries, regions and groupings: shares of intermediate imports of minerals and metals contained in manufacturing exports, 1995, 2000 and 2014
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Organization for Economic Cooperation and Development (OECD)/World Trade Organization (WTO), Trade in Value Added (TiVA) [online database] https://stats.oecd.org/index.aspx?queryid=75537, and Centre for International Prospective Studies and Information (CEPII), International Trade Analysis Database (BACI).

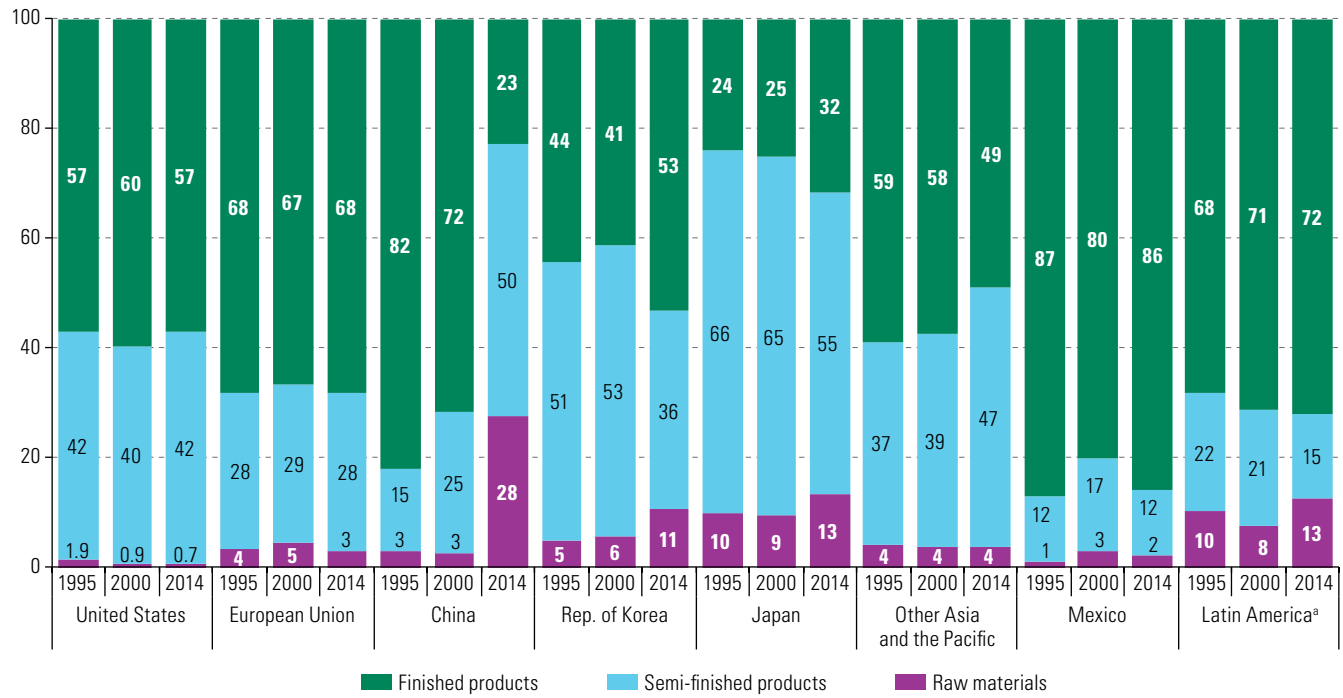
[a] Latin America includes Argentina, Brazil, Chile, Colombia, Costa Rica and Peru.

3 This section deals with so-called backward linkages to the minerals and metals sector in global value chains. These are measured in gross terms by the imports of non-energy minerals and metals that countries use as inputs to produce their exports. The database used was constructed by combining information from the input-output matrices of multiple countries of the Organization for Economic Cooperation and Development (OECD) and the World Trade Organization (WTO) and bilateral trade data from the International Trade Analysis Database (BACI) of the Centre for International Prospective Studies and Information (CEPII). Details of the methodology can be consulted in Zaclicever (2017).

4 The 63 countries included in the OECD/WTO input-output matrices are considered to be importers of minerals and metals for intermediate use. The Asia and the Pacific region includes Australia, Brunei Darussalam, Cambodia, China, Hong Kong Special Administrative Region of China, India, Indonesia, Japan, Malaysia, New Zealand, the Philippines, the Republic of Korea, Singapore, Taiwan Province of China, Thailand and Viet Nam.

Globally, the bulk of imported minerals and metals used to produce exports go into semi-finished and finished products (see figure II.24). The most significant change can be observed in China, where the basket of imported minerals and metals has gradually shifted from one dominated heavily by finished products to one dominated by products with a lower level of processing. In particular, the share of commodities in intermediate imports is much greater in China than in other countries, although semi-finished products make up half the total. This change in the composition of intermediate imports in China reflects a shortening of the global value chains associated with the production of its exports, in that inputs (of mining products in this case) are increasingly processed within the country.

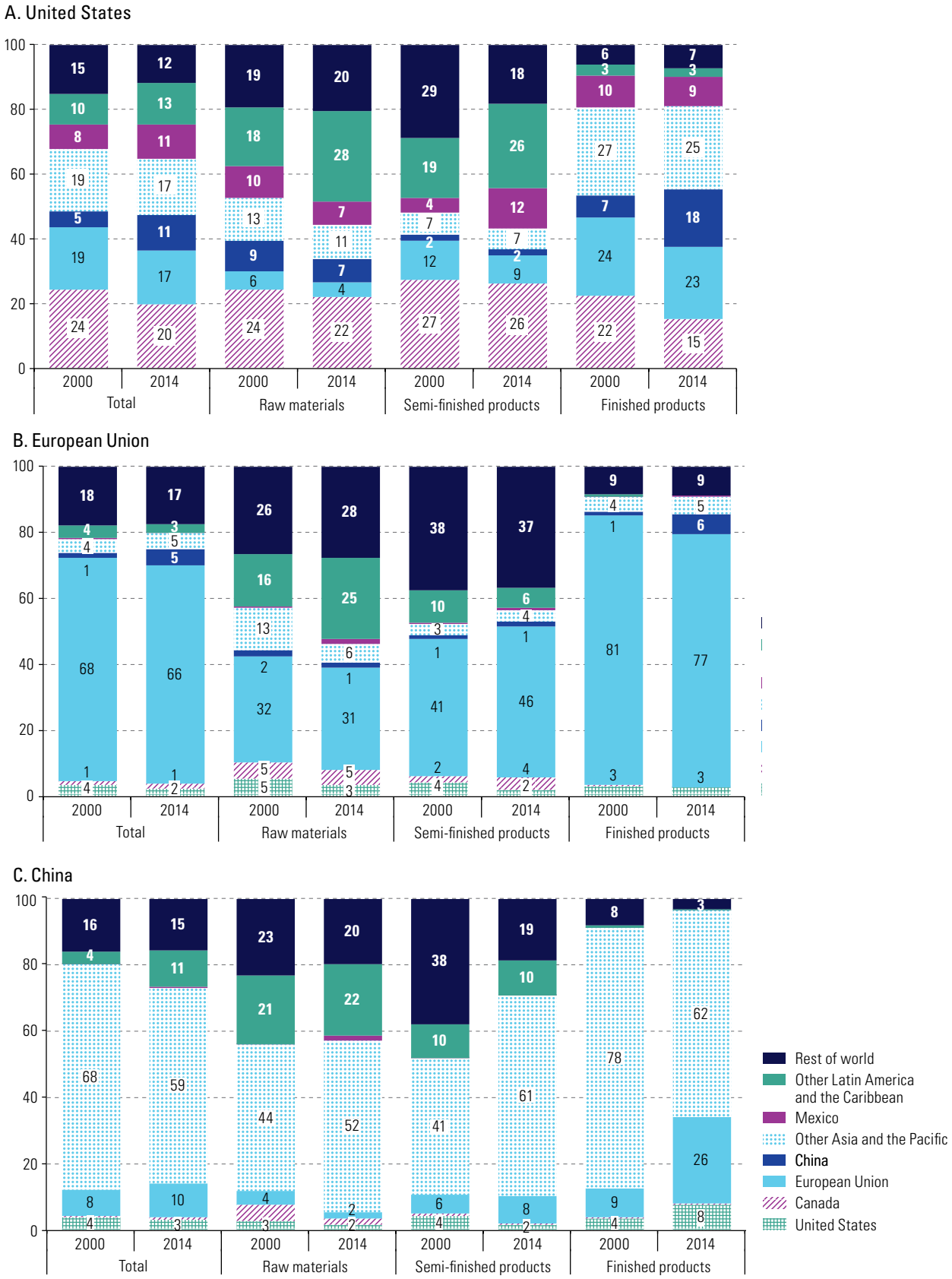
Figure II.24
Selected countries, regions and groupings: composition of intermediate imports of minerals and metals in manufacturing exports, 1995, 2000 and 2014
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Organization for Economic Cooperation and Development (OECD)/World Trade Organization (WTO), Trade in Value Added (TiVA) [online database] https://stats.oecd.org/index.aspx?queryid=75537, and Centre for International Prospective Studies and Information (CEPII), International Trade Analysis Database (BACI).
[a] Latin America includes Argentina, Brazil, Chile, Colombia, Costa Rica and Peru.

As regards the geographical origin of inputs, the Asia and the Pacific region is the main supplier for China's exports in all three categories of intermediate mining goods (see figure II.25). Likewise, the intermediate minerals and metals imported by the other countries of Asia and the Pacific mainly originate within the region, with an increasing share of finished products coming from China (which has displaced other countries in the region). The regional character of value chains is also seen in the case of the European Union (particularly for non-commodities) and, to a lesser extent, the United States. Nonetheless, China's role as a supplier of processed minerals and metals has increased significantly, especially in the United States.

Figure II.25
Selected countries, regions and groupings: composition of intermediate imports of minerals and metals in manufacturing exports, by geographical origin, 2000 and 2014
(Percentages)



D. Other Asia and the Pacific

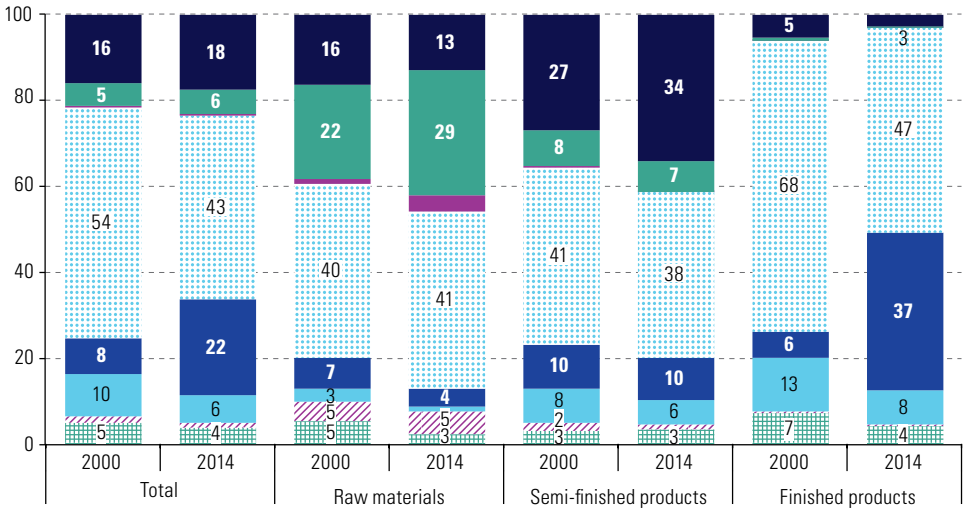
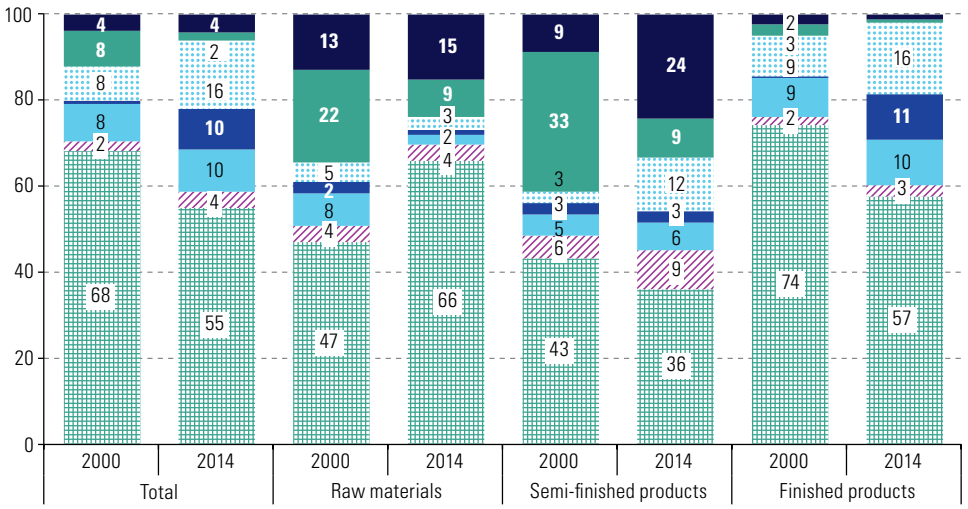
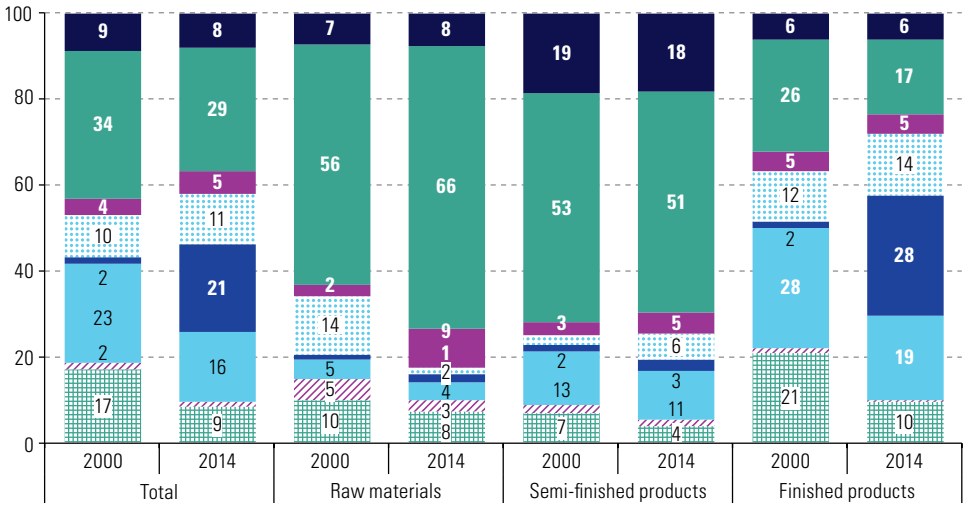


Figure II.25 (concluded)

E. Mexico



F. Latin America[a]



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Organization for Economic Cooperation and Development (OECD)/World Trade Organization (WTO), Trade in Value Added (TiVA) [online database] https://stats.oecd.org/index.aspx?queryid=75537, and Centre for International Prospective Studies and Information (CEPII), International Trade Analysis Database (BACI).

[a] Latin America includes Argentina, Brazil, Chile, Colombia, Costa Rica and Peru.

Latin America and the Caribbean mainly features as a supplier of mineral and metal commodities, with Brazil, Chile, Mexico and Peru as the main countries of origin within the region. This is especially true of inputs imported by the countries of Asia and the Pacific and the European Union, where the region plays only a marginal role as a supplier of finished intermediate products. In the case of China's exports, for example, Brazil (11%), Chile (6%) and Peru (4%) are among the top five suppliers of mineral and metal commodities, together with Australia (45%) and South Africa (3%). In the case of semi-finished products, only Chile has a significant share (8%), while in that of finished products the region as a whole accounts for only a marginal share. Where the United States is concerned, Latin America and the Caribbean registers similar shares for commodities and semi-finished products, although its share is also significant for finished products. Within the Latin America region, Mexico is the main country of origin for mining inputs used for United States exports (followed by Brazil, Chile and Peru), with non-commodities making up the bulk of these.

Analysis of the imported minerals and metals contained in the exports of Latin America (six countries) reveals strong intraregional production links (mainly in Brazil, Chile, Peru, Mexico and Argentina), especially with regard to commodities and semi-finished products. The region's share as a supplier of finished inputs is also significant, but has been affected by the growing weight of China, which has also displaced other countries outside the region. Although Mexico has a different profile from the other countries in the region because of its deep integration with the United States (the main source of minerals and metals for its exports), there has also been a large increase in China's involvement as a supplier of more highly processed inputs.

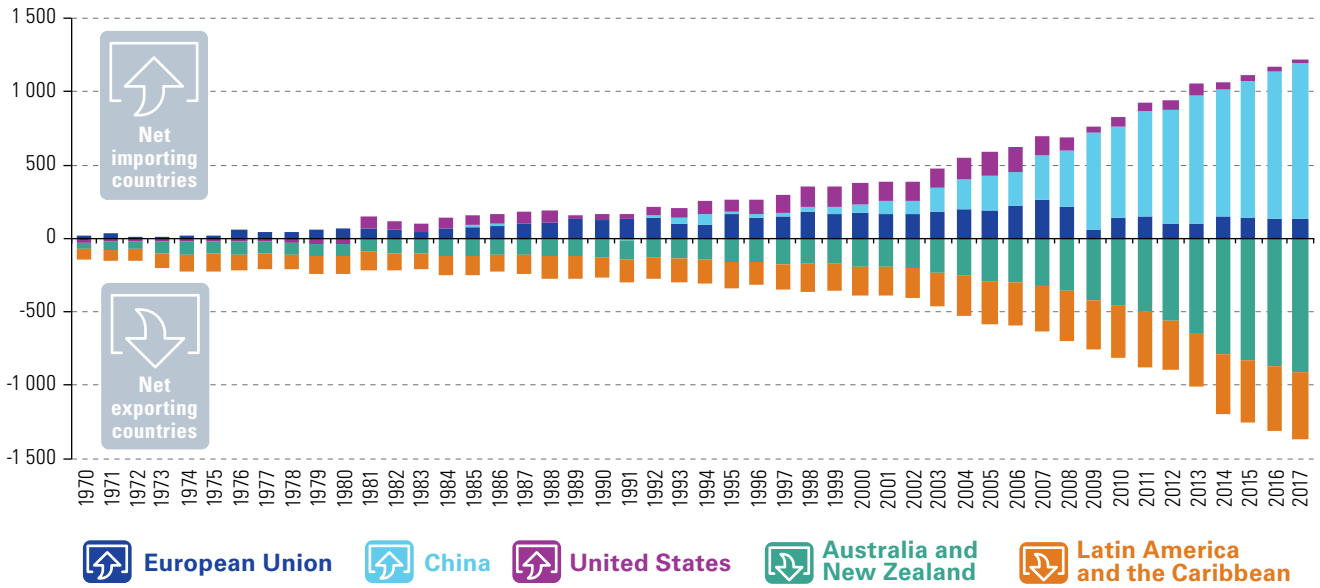
D. The region runs an increasingly negative physical trade balance

Trade balances, measured in monetary terms, vary with price cycles and export and import volumes. Conversely, the physical trade balance emphasizes the international flow of materials measured in tons, and its purpose is to reflect pressure on natural resources and the environment. The physical trade balance is arrived at by subtracting physical exports from physical imports. Physical imports are materials entering an economy from other economies, while physical exports are materials going out to other economies. Thus, the physical trade balance is calculated in the opposite way to the monetary trade balance, which is arrived at by subtracting monetary imports (currency outflows) from monetary exports (currency inflows).

A positive physical trade balance means that the region or country is a net importer of materials, while a negative result means that it is a net exporter and is associated with a primary-export-oriented pattern. The latter applies to Latin America and the Caribbean, which, like Oceania, is a net exporter of minerals. Conversely, the more industrialized countries are net importers. In particular, China's physical trade surplus for minerals increased 19-fold between 2000 and 2017 to 1.062 billion tons (see figure II.26). The country's great industrial and urban transformation required the import of unprecedented quantities of minerals and other raw materials and stoked the supercycle of high prices from 2003 to 2011.

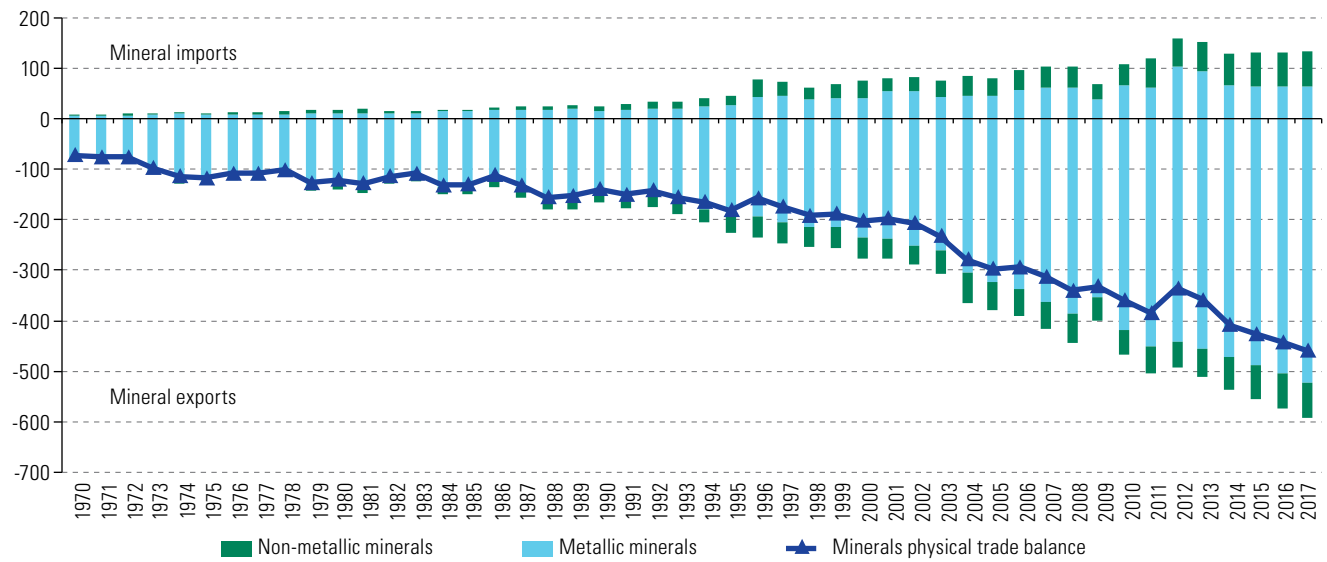
Latin America and the Caribbean's physical deficit in the trade in minerals (equivalent to its net exports) was 459 million tons in 2017, a record. Almost the whole of this deficit originated in the metallic minerals sector. While the region's imports of metallic and non-metallic minerals have been similar in physical terms over the current decade, exports of metallic minerals such as iron and copper have historically far exceeded those of non-metallic minerals, and the gap between the two has widened significantly since 2000 (see figure II.27).

Figure II.26
Selected countries, regions and groupings: minerals physical trade balance, 1970-2017
(Millions of tons)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of International Resource Panel, Global Material Flows Database [online database] http://www.resourcepanel.org/global-material-flows-database.

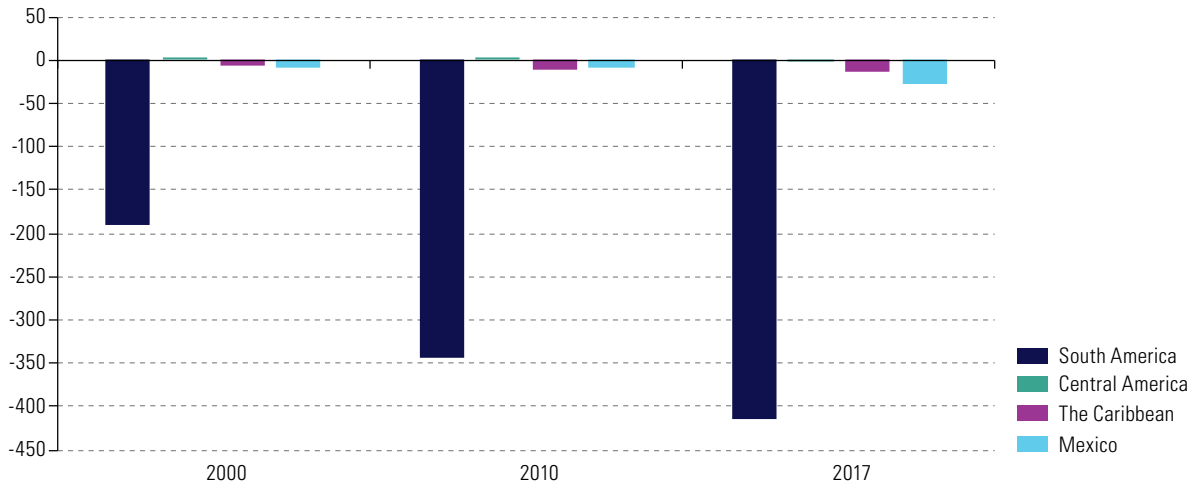
Figure II.27
Latin America and the Caribbean: metallic and non-metallic mineral exports, imports and physical trade balance, 1970-2017
(Millions of tons)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of International Resource Panel, Global Material Flows Database [online database] http://www.resourcepanel.org/global-material-flows-database.

In 2017, 90% of the region's minerals physical trade deficit was accounted for by the South America subregion, which contains Latin America and the Caribbean's main exporting countries in this sector. The South American physical deficit in the minerals trade has more than doubled this century, rising from 190 million tons in 2000 to 415 million tons in 2017 (see figure II.28). This largely reflects strong demand for minerals in China and other Asian economies during the period. The physical deficit in the minerals trade of the Caribbean and Mexico also widened between 2000 and 2017, although by much less than South America's. Central America's position is close to balance.

Figure II.28
Latin America and the Caribbean: minerals physical trade balance by subregion, 2000, 2010 and 2017
(Millions of tons)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of International Resource Panel, Global Material Flows Database [online database] http://www.resourcepanel.org/global-material-flows-database.

In sum, the region as a whole exports more minerals than it receives from the rest of the world, and this pattern has become more pronounced during this century, essentially because of the rise in net exports of metallic minerals from South America. This heightened primary export specialization has tended to increase pressure on mining resources themselves and the environment (air, water and soil pollution) and to foment socio-environmental conflicts (De Miguel, 2018). Consequently, it is indispensable for the region to reflect strategically on the role of the export mining sector in the context of a global economy that should be undergoing a major decarbonization process over the coming decades. This is the theme of the following section.

E. The green economy offers an opportunity to add value to mining exports

The indispensable transition to a low-carbon global economy is indissolubly linked to mining. First, this is an energy-intensive activity, and thus potentially intensive in greenhouse gas emissions as well. Second, the production of a number of the technologies needed to mitigate climate change requires great quantities of minerals and metals (Ali and others, 2017).[5] A recent study (World Bank, 2017) has projected the demand for a number of metals up to 2050 by looking at the expected evolution of three technologies considered essential in the effort to combat climate change: solar energy, wind energy and storage batteries. To this end, it evaluates three scenarios in which technological trajectories result in average global temperature rises of up to 2, 4 and 6 degrees centigrade by 2100. These scenarios

[5] For example, the construction of a 3 megawatt wind turbine requires 335 tons of steel, 4.7 tons of copper, 3 tons of aluminium, 2 tons of rare earths and 1,200 tons of concrete (La Porta, 2018).

have been dubbed 2DS, 4DS and 6DS, respectively. The 6DS is basically an extension of current trends and can thus be treated as a business as usual scenario (IEA, 2015).

The manufacture of wind turbines, photovoltaic panels and storage batteries requires large quantities of metals. However, accurately projecting demand for each metal over a time horizon of several decades is difficult. It will depend, among other variables, on the intensity with which the different technologies are deployed (this is assumed to be greatest in 2DS), the possible appearance of alternatives and the particular needs that arise within each technology. For example, metal needs are different for lead-acid batteries and lithium-ion batteries (see table II.13).

Table II.13
Metal content of selected clean technologies

Metal	Wind turbines	Photovoltaic solar panels (crystalline silicon)	Storage batteries	
			Lead-acid	Lithium-ion
Aluminium	X	X		X
Steel[a]	X		X	X
Cobalt				X
Copper	X			
Chromium	X			
Iron	X	X		
Indium				
Lithium				X
Manganese	X			X
Neodymium	X			
Nickel	X	X		X
Silver		X		
Lead	X	X	X	
Zinc	X			

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Bank, *The Growing Role of Minerals and Metals for a Low Carbon Future*, Washington, D.C., 2017, tables 2.1, 2.2 and 2.3.

[a] Steel is not a metal but an alloy of iron and carbon.

Notwithstanding the factors thus making for uncertainty, projections indicate a large increase in metals demand associated with clean technology use (World Bank, 2017, pp. 12-17):

- In the case of wind energy, demand for a wide range of metals would be 150% greater by 2050 under 4DS than under the baseline scenario (6DS).[6] The increase in demand would be close to 250% under the most ambitious scenario (2DS) relative to 6DS.
- In the case of solar energy, demand for metals would also be about 150% greater by 2050 under scenario 4DS than under scenario 6DS and about 300% greater under scenario 2DS than under 6DS.[7]
- Lastly, in the case of storage batteries, demand for metals would be about 100% greater by 2050 under scenario 4DS than under scenario 6DS, but almost 1,000% greater under scenario 2DS.[8]

Latin America and the Caribbean has a substantial proportion of the known reserves of several metals that are critical to the production of clean technologies (see table II.14). In particular, Argentina and Chile between them have 60% of known reserves of lithium.[9] The metal has a strategic value, as it is a basic input for the lithium-ion batteries that are at the centre of electromobility. It is estimated that global output of electric vehicles, including hybrids, will increase from 3.2 million units in 2017 to somewhere between 13 million and 18 million in 2025 and between 26 million and 36 million in 2030, lifting their share of global light vehicle output from 2% in 2016 to between 22% and 30% in 2030 (Azevedo and others, 2018).

6 Aluminium, copper, chromium, iron, manganese, molybdenum, neodymium, nickel, lead and zinc.
7 Aluminium, copper, iron, indium, manganese, molybdenum, nickel, silver, lead and zinc.
8 Aluminium, cobalt, iron, lithium, manganese, nickel and lead.
9 To these reserves may be added large resources that remain unexploited in Argentina (9.8 million tons), the Plurinational State of Bolivia (9 million tons) and Chile (8.4 million tons). These are equivalent to about half the global lithium resources discovered to date (USGS, 2018). In July 2018, furthermore, the Peruvian firm Macusani Yellowcake, a subsidiary of Plateau Energy Metals of Canada, announced the discovery of a large deposit of lithium and uranium in the Andean region of Puno, which could become the world's largest lithium mine (Gestión, 2018).

Table II.14
Selected countries of Latin America and the Caribbean: reserves of selected metals, 2017
(Thousands or millions of tons and percentages of global reserves)

Country	Bauxite		Copper		Iron ore		Lithium		Manganese	
	Millions of metric tons	Percentage of world total	Millions of metric tons	Percentage of world total	Millions of metric tons	Percentage of world total	Thousands of metric tons	Percentage of world total	Millions of metric tons	Percentage of world total
Argentina							2 000	12.5		
Brazil	2 600	8.7			23 000	12.1	48	0.3	120	17.6
Chile			170	21.5			7 500	46.9		
Guyana	850	2.8								
Jamaica	2 000	6.7								
Mexico			46	5.8					5	0.7
Peru			81	10.3						
Latin America and the Caribbean[a]	5 450	18.2	297	37.6	23 000	13.5	9 548	59.7	125	18.3
World total	**30 000**	**100**	**790**	**100**	**170 000**	**100**	**16 000**	**100**	**680**	**100**

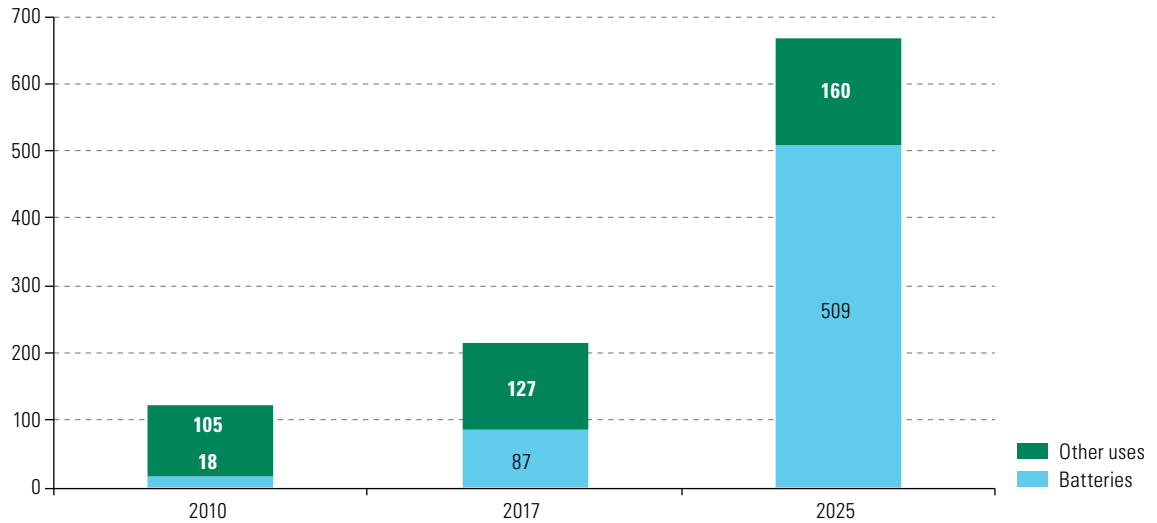
Country	Molybdenum		Nickel		Lead		Rare earths		Zinc	
	Thousands of metric tons	Percentage of world total	Thousands of metric tons	Percentage of world total	Thousands of metric tons	Percentage of world total	Thousands of metric tons	Percentage of world total	Thousands of metric tons	Percentage of world total
Argentina	100	0.6								
Bolivia (Plurinational State of)					1 600	1.8			4 800	2.1
Brazil			12 000	16.2			22 000	18.3		
Colombia			1 100	1.5						
Cuba			5 500	7.4						
Chile	1 800	10.6								
Guatemala			1 800	2.4						
Mexico	130	0.8			5 600	6.4			20 000	8.7
Peru	2 200	12.9			6 000	6.8			28 000	12.2
Latin America and the Caribbean[a]	4 230	24.9	20 400	27.6	13 200	15.0	22 000	18.3	52 800	23.0
World total	**17 000**	**100**	**74 000**	**100**	**88 000**	**100**	**120 000**	**100**	**230 000**	**100**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United States Geological Survey (USGS), *Mineral Commodity Summaries 2018* [online] https://minerals.usgs.gov/minerals/pubs/mcs/2018/mcs2018.pdf.

[a] Sum of the shares of countries for which information is available.

The explosive development of electromobility is expected to directly impact global demand for lithium, which is forecast to more than triple between 2017 and 2025 from 214,000 to 669,000 tons equivalent of lithium carbonate. Batteries' share of total demand is expected to rise from 41% now to 76% in 2025 (see figure II.29). This is explained both by the greater number of electric vehicles on the roads and by the need to produce batteries with greater energy density (i.e., able to store a great deal of energy for their size or weight).

Figure II.29
Global demand for lithium, 2010, 2017 and 2025[a]
(Thousands of tons equivalent of lithium carbonate)



Source: M. Azevedo and others, "Lithium and cobalt: a tale of two commodities", McKinsey & Company, June 2018 [online] https://www.mckinsey.com/industries/metals-and-mining/our-insights/lithium-and-cobalt-a-tale-of-two-commodities.
[a] Demand in 2025 is projected. Batteries include those for vehicles, consumer electronics and energy storage networks.

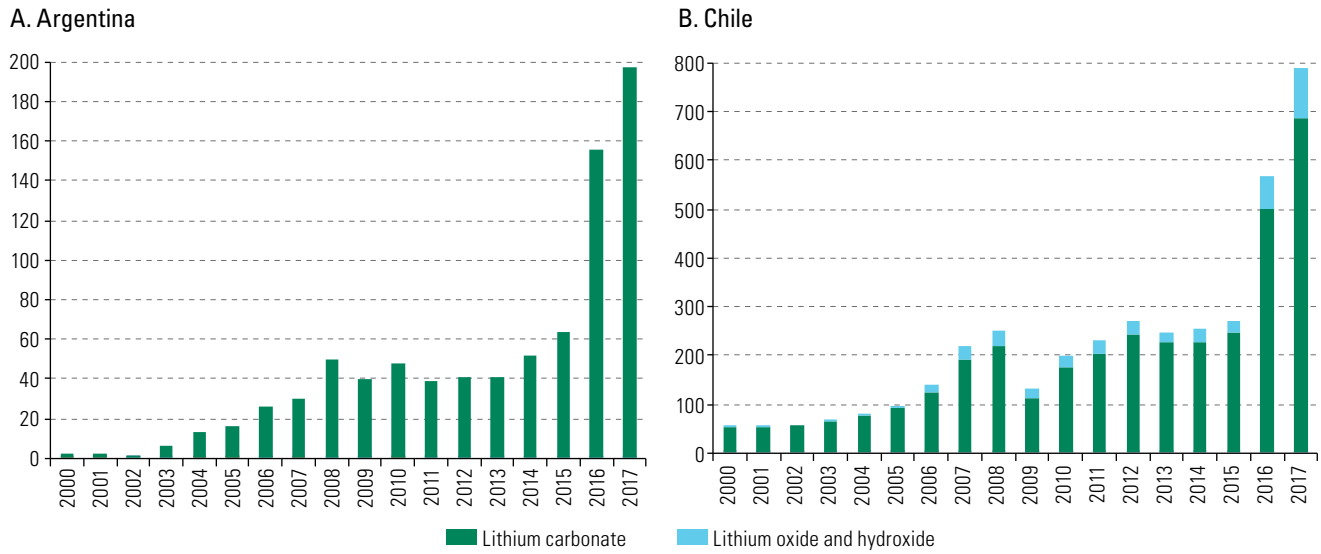
The global supply of lithium has an oligopolistic structure: three countries (Australia, Chile and Argentina, in descending order) accounted for 89% of estimated production in 2017 (USGS, 2018).[10] Furthermore, four firms (Talison, SQM, Albemarle and FMC) control the bulk of global production (Azevedo and others, 2018). The first two are vertically integrated with the Chinese firm Tianqi Lithium, which is involved in several links of the lithium chain, from mining and refining to battery production. For one thing, Tianqi owns 51% of Talison Lithium. This Australia-based firm is the leading producer of lithium ore, with its Greenbushes mine producing between 35% and 40% of the global supply.[11] For another, in May 2018 Tianqi announced the purchase of 24% of the Chilean firm SQM,[12] the world's second-largest producer, which has been licensed by the State to work deposits situated on the Atacama salt pan. The Chilean competition authorities are reviewing this acquisition because of concerns about the dominant position it would give Tianqi in the global lithium market. The United States firm Albemarle (formerly Rockwood), which owns 49% of Talison, also has operations on

[10] Excluding United States production, whose level is not given in this publication.
[11] Talison also owns operations in the Atacama region of Chile, together with local partners. See [online] http://www.tianqilithium.com/en/resinfo.aspx?ContentID=6&t=56 y http://www.talisonlithium.com/about-talison/company-overview (retrieved on 27 June 2018).
[12] This holding was previously owned by the Canadian agrochemicals firm Nutrien (formerly Potash Group). Tianqi had already acquired 2.1% of SQM in September 2016.

the Atacama salt pan and is vertically integrated, as is FMC. The latter extracts lithium from the Hombre Muerto salt pan in Argentina.

In Argentina and Chile, lithium is extracted from salt pans. The main product obtained from processing is lithium carbonate, a compound that contains 19% of the metal. Lithium carbonate makes up the entirety of Argentina's lithium exports and almost 90% of Chile's (see figure II.30). In Australia, conversely, lithium is extracted from solid rock in the form of a mineral known as spodumene. This is processed to obtain lithium hydroxide, a compound with a higher concentration of the metal (29%). This makes it the preferred input for the production of electric vehicle batteries, and its share is expected to increase with rising demand for longer-range batteries. Turning lithium carbonate from salt pans into lithium hydroxide is currently more expensive than obtaining the latter straight from spodumene (Azevedo and others, 2018).

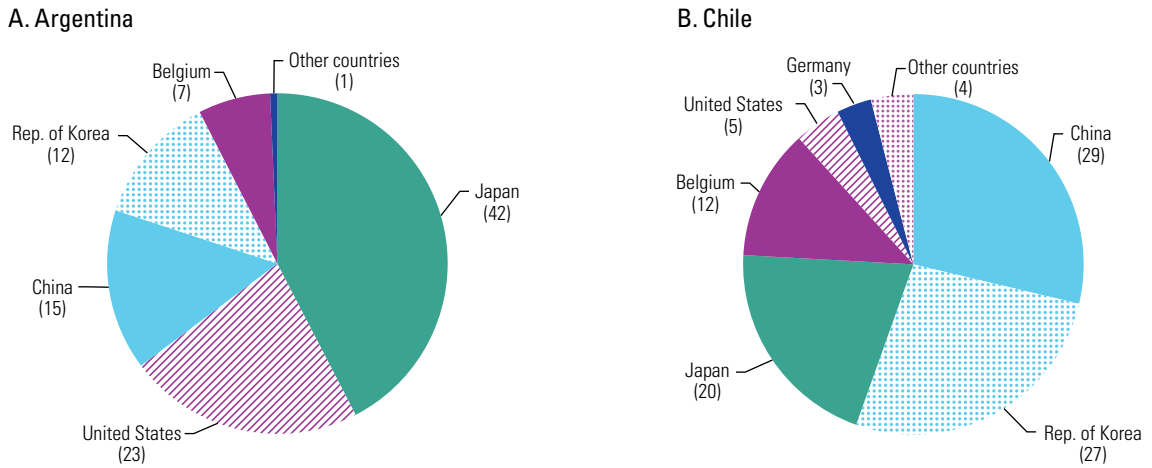
Figure II.30
Argentina and Chile: worldwide exports of lithium products, 2000-2017
(Millions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Argentina, Chile, Peru and the Plurinational State of Bolivia are faced with the great challenge of seizing the strategic advantage represented by their lithium reserves to improve their position in the value chain for this product. This is particularly difficult in an industry with oligopolistic characteristics and, in the first two countries, a strong presence of vertically integrated foreign firms whose main concern is to secure their own supply of raw material for processing. Almost all of Argentina and Chile's lithium carbonate exports go to China, the United States, Japan, the Republic of Korea and Belgium (see figure II.31). These countries, in turn, are among the main global exporters of higher value added products such as lithium hydroxide and batteries (see table II.15). It is thus not surprising that Tianqi should have wished to take a stake in SQM, considering that Chile was the country of origin for 65% of China's lithium carbonate imports in 2016, while Chile and Argentina together supply 89% of the country's external purchases (see figure II.32). In this context, and with different approaches, Chile and the Plurinational State of Bolivia are taking steps to add more value locally to the lithium extracted from the Atacama and Uyuni salt pans, respectively (see box II.1).

Figure II.31
Argentina and Chile: distribution of lithium carbonate exports by destination, 2017
(Percentages)



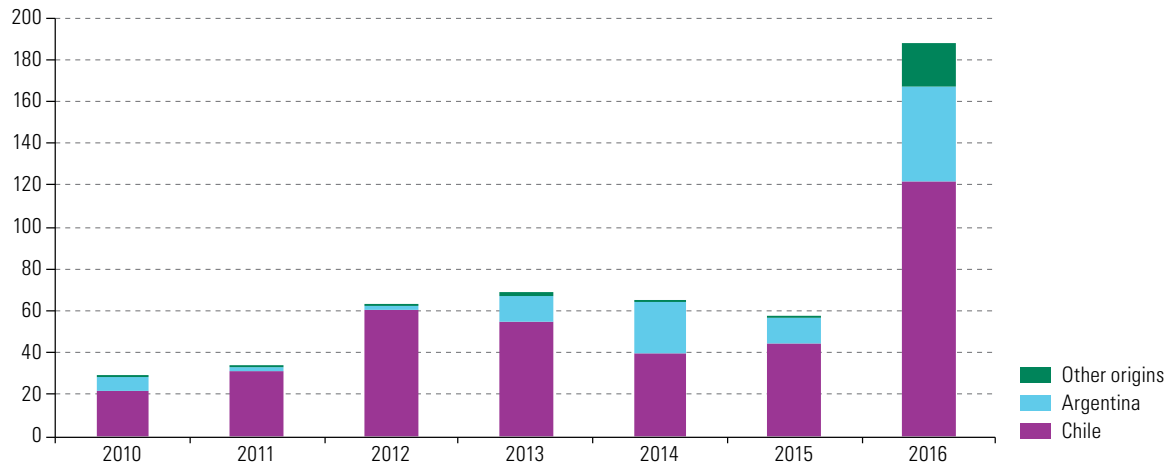
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Table II.15
Main exporters and importers of products in the lithium value chain, 2016
(Millions of dollars and percentages)

	Country		Exports	Share	Country	Imports	Share
Spodumene	1	Australia	294	25.2	China	323	28.1
	2	China	130	11.2	Germany	76	6.6
	3	United States	97	8.4	United States	61	5.3
	4	Spain	68	5.8	Japan	59	5.1
	5	Germany	67	5.7	France	58	5.0
Lithium carbonate	1	Chile	499	61.2	China	188	23.7
	2	Argentina	156	19.1	Republic of Korea	161	20.3
	3	Belgium	70	8.6	Japan	130	16.4
	4	China	29	3.6	Belgium	80	10.1
	5	Germany	23	2.8	United States	79	9.9
Lithium hydroxide	1	China	140	37.6	Republic of Korea	92	24.3
	2	United States	71	19.0	Japan	91	24.1
	3	Chile	66	17.8	India	31	8.2
	4	Russian Federation	44	11.8	Belgium	25	6.6
	5	Belgium	31	8.5	Canada	22	5.7
Lithium batteries	1	China	364	16.7	United States	310	12.2
	2	Singapore	298	13.7	Singapore	274	10.7
	3	United States	287	13.2	Hong Kong (China)	219	8.6
	4	Japan	197	9.1	China	217	8.5
	5	Indonesia	191	8.8	Germany	160	6.3

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Figure II.32
China: lithium carbonate imports by origin, 2010-2016
(Millions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.

Box II.1
Chile and the Plurinational State of Bolivia seek to improve their position in the electromobility global value chain

The Chilean Economic Development Agency (CORFO), acting on behalf of the Chilean State, has signed contracts with Albemarle (in January 2017) and SQM (in January 2018) that regulate the terms of their respective concessions to extract lithium from the Atacama salt pan. These contracts include both firms' commitment to supply 25% of their output at a preferential price to firms (foreign or local) willing to add value to the resource within the country. In the case of the contract with Albemarle, an international call for tenders led to the selection in March 2018 of the Chinese firm Sichuan Fulin, a Korean consortium comprising Samsung SDI and Pohang Iron and Steel Company (POSCO) and the Chilean firm Molymet. Each of the three firms or consortia selected offered to produce between 19,000 and 20,000 tons of cathodic material for electric batteries annually, with a combined investment of over US$ 700 million. These investments had yet to materialize as of October 2018 because agreement had still to be reached between CORFO and Albemarle on the preferential prices at which the latter is to sell to Sichuan Fulin, Samsung SDI and POSCO. The international call for tenders associated with the contract between CORFO and SQM is expected in late 2018.

In June 2018, CORFO announced that in October the same year, bidding would be opened for the construction of a Centre for Energy Transition and Advanced Materials for Lithium Development in the Antofagasta region, where the Atacama salt pan is situated. The Centre would have a core annual investment budget of US$ 12 million and would develop around three main platforms: energy transition, solar energy and the development of advanced materials for the lithium industry. Its financing will come from royalties paid by Albemarle for its mining operations in the Atacama salt pan. Under the government's plan, the centre is not meant to be a public-private initiative, but is to be headed by the academic and private sector bodies selected in the tender process.

The Plurinational State of Bolivia has followed a different strategy to Chile's. Its constitution establishes that the State will be responsible for the control and management of exploration, exploitation, industrialization, transportation and commercialization of strategic natural resources (which include lithium) through public institutions, which will be able to employ the services of private sector firms and set up joint ventures. In 2014, a lithium battery assembly pilot plant was set up as part of the country's lithium industrialization project. The first exports of lithium carbonate took place in 2016. In 2017, a pilot plant for cathodic material was set up and the State firm Yacimientos de Litio Bolivianos (YLB) was created with responsibility for carrying out the activities of the entire lithium production chain. In August 2018, a strategic partnership was announced between YLB and the German firm ACI Systems to produce between 300,000 and 400,000 lithium batteries a year in the Plurinational State of Bolivia, mainly to supply the electric vehicle market in Germany. ACI Systems was selected out of eight foreign firms, and the agreement between the two parties is to be implemented by creating a joint venture that will be a subsidiary of YLB.

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Chilean Economic Development Agency (CORFO), "Corfo anuncia centro de transición energética de litio en Antofagasta", 29 June 2018 [online] https://www.corfo.cl/sites/cpp/sala_de_prensa/regional/29-06-2018_antofagasta; *El Mercurio*, "Otro impasse con el litio: acuerdo para industrializar producción de Albemarle no define ni el producto ni a qué precio debe venderlo", 1 July 2018 [online] http://www.economiaynegocios.cl/noticias/noticias.asp?id=483307; *La Razón*, "Bolivia producirá al año hasta 400.000 baterías de litio", 2 August 2018 [online] http://www.la-razon.com/economia/Bolivia-producira-ano-baterias-litio_0_2976302344.html; and data from Yacimientos de Litio Bolivianos (YLB).

Opportunities relating to electromobility are not confined to lithium. Given the intensive use of copper in the production of hybrid and electric vehicles, their growing use is expected to keep demand for the metal high over the coming years.[13] In this context, particular mention should be made of the "Responsible, sustainable and traceable copper" pilot project implemented by Corporación Nacional del Cobre de Chile (CODELCO), the State enterprise, which is the world's largest producer of mined copper. The project consists in the production and export of copper cathodes certified in seven dimensions relating to sustainability in a broad sense, including the carbon and water footprint, respect for human rights, occupational health and safety and community and territorial impact, among others. As part of the project, CODELCO has already signed agreements to supply "sustainable cathodes" to major buyers such as the Japanese copper trader Mitsui, the German automobile producer BMW and the French cable manufacturer Nexans. It is expected that 5% of CODELCO output will have this seal by 2020, reaching 100% of the firm by 2040. CODELCO thus expects to move towards the decommodification of the copper it sells on international markets by supplying a differentiated product that meets the increasing sustainability demands of firms using the metal in their value chains (Landerretche, 2018).

F. The challenge of adding value and sustainability to mining exports

Latin America and the Caribbean as a whole is a net exporter of minerals and metals, and its share of global exports in this sector (8%) exceeds its share of global exports of all goods (5.6%). However, the region's exports of minerals and metals are characterized by a low degree of processing, which translates into the highest proportion of commodities of any world region (37%, which is four times the share of commodities in global exports of minerals and metals). In fact, the share of raw materials in the region's mineral and metal exports has almost doubled over the past 20 years, and the corollary of this has been a decline in the share of semi-finished products and especially finished ones. This is largely connected to the increasing orientation of the region's exports towards China and the rest of Asia, where demand is concentrated in raw materials such as iron ore and copper ore. At the same time, China has become the world's leading producer of steel, aluminium, cast copper and other products, competing strongly with the region's countries in finished and semi-finished goods.

The trends described mean that the region has increased its specialization as a supplier of raw mineral materials in the early stages of value chains while losing share in those stages with higher levels of processing further along these chains. The situation is a cause for concern because of the well-known problems associated with dependency on exports of mining commodities. They include the vulnerability of exports, growth and fiscal revenues to fluctuations in their prices, the low level of value added and diversification into new products and services with greater knowledge content, and environmental damage of various kinds.

The indispensable transition to a low-carbon global economy is indissolubly linked to mining, since production of a number of the technologies needed to mitigate climate change will require large quantities of minerals and metals. Latin America and the Caribbean has a large portion of the known reserves of a number of metals that are critical to the production of clean technologies, which opens up what were until recently unimagined prospects for moving forward simultaneously with sustainability and with

[13] While the manufacture of an internal combustion engine automobile usually requires 23 kilograms of copper, a hybrid electric vehicle requires 40 kilograms and an electric battery-powered vehicle 83 kilograms (Landerretche, 2018).

production and export diversification. However, historical experience indicates that this progress will not take place spontaneously in response to market price signals, but will require active industrial and technology policies.

Growing global demand for metals such as lithium is an opportunity for the region to learn from the mistakes of the past and implement policies to ensure that more value is added locally and more knowledge disseminated in relation to these resources. At the same time, environmental sustainability can become a powerful factor in differentiating the region's mining exports, for example if it reduces its carbon footprint by gradually replacing fossil fuels with unconventional renewable energies in its production processes. Incipient efforts along these lines in some of the region's countries are encouraging, and ought to be stepped up and applied more widely in the coming years.

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Annex II.A1

Table II.A1.1
Classification of minerals and metals by cluster and degree of processing[a]
(By items of the Standard International Trade Classification (SITC), Revision 3)

Cluster	Stage I: Raw materials		Stage II: Semi-finished products		Stage III: Finished products	
Non-metallic minerals	Crude fertilizers Sodium nitrate Natural calcium phosphates Natural aluminium calcium Phosphates and phosphatic chalk Stone, sand and gravel Sulphur and unroasted iron pyrites Clays and other crude minerals Asbestos	272 272.2 272.3 273 274 277 278.4	Semi-processed stone and limestone products (lime, cement, clinker, stones) Semi-processed glass products (in the mass, balls, sheets) Semi-processed products of precious stones (pearls, rough diamonds, piezo-electric quartz)	661 664.1 to 664.5 667	Refractory bricks, blocks, concretes, tiles Ceramic tubes Floor flags and paving Natural abrasives grindstones Plaster items Graphite articles Asbestos fibres Ceramics Drinking glasses, glass mirrors	662 663 664.7 to 664.9 665 666
Copper	Copper ores and concentrates	283.1	Copper and unwrought alloys thereof (blister and refined)	283.2 682.1	Copper and wrought alloys thereof (copper wire, rods, plates, sheets, tubes, pipes and fittings, etc.)	682.3 682.4 682.5 682.6 682.7
Iron and steel	Iron ore and concentrates	281	Unwrought iron, ferroalloys Iron or steel ingots	282 671 672	Bars, rods Plates and sheets Bands and strips Rails Cables and wires Angles Tubes and fittings Casting and forging pieces	673 674 675 676 677 678 679
Lead and uranium	Lead ores and concentrates	286.1 286.2 287.4	Unwrought lead and alloys thereof Refined lead	685.1 685.12	Lead bars, rods, profiles and wires Lead tubes, pipes and tube and pipe fittings (e.g., couplings, elbows, sleeves)	685.21 685.24
Zinc	Zinc ores and concentrates	287.5	Unwrought zinc and alloys thereof	686.1	Wrought zinc and alloys thereof	686.3 to 686.33
Nickel	Nickel ores and concentrates	284.1	Nickel oxide sinters and other intermediate products of nickel metallurgy	683.1	Nickel bars, rods and wire, nickel tubes, couplings, plates and sheets	683.2
Bauxite and aluminium	Bauxite	287.31	Alumina (aluminium oxide)	522.56 287.32	Aluminium	684
Tin	Tin ores and concentrates	287.6	Unwrought tin and alloys thereof	687.1	Wrought tin and alloys thereof	687.2
Precious metals	Silver ores and concentrates	289.11	Semi-manufactured silver and platinum Silver plated with gold and platinum Base metals plated with silver Unwrought, unworked platinum	681.1 681.2	Jewellery and silversmiths' wares (pendants, rings, necklaces, etc.)	897.3
Various metals	Manganese ores and concentrates Molybdenum, niobium, tantalum, titanium, vanadium and zirconium ores and concentrates Chromium ores and concentrates Tungsten ores and concentrates	287.7 287.8 287.91 287.92	Ash and residues of compound metals (zinc, copper, aluminium, nickel, lead, scrap) Other base metal scrap	689 691 692	Tanks Tools Scissors Cables Batteries	693 694 695 696 697 699 748.3 813.2

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Kuwayama and Durán Lima, "La calidad de la inserción internacional de América Latina y el Caribe en el comercio mundial", *International Trade* series, No. 26 (LC/L.1897-P), Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), May 2003.

[a] The examples of products included in each stage are not exhaustive.

Table II.A1.2
Latin America and the Caribbean: trade in minerals and metals, annual averages for 2015-2017[a]
(Millions of dollars)

Region, subregion or country	Exports	Imports	Trade balance
Latin America and the Caribbean	**156 818**	**86 028**	**70 790**
Latin America	**151 450**	**80 638**	**70 812**
South America	**114 177**	**33 397**	**80 780**
Argentina	4 824	4 668	156
Bolivia (Plurinational State of)	3 358	1 087	2 271
Brazil	40 712	12 050	28 662
Chile	35 184	4 649	30 535
Colombia	3 063	3 424	-361
Ecuador	769	1 538	-769
Paraguay	115	725	-610
Peru	23 719	3 457	20 262
Uruguay	175	578	-404
Venezuela (Bolivarian Republic of)	2 259	1 221	1 039
Mexico	**31 448**	**38 928**	**-7 480**
Central America	**3 243**	**5 587**	**-2 344**
Costa Rica	476	1 289	-814
El Salvador	304	700	-396
Guatemala	1 245	1 195	50
Honduras	413	746	-333
Nicaragua	386	594	-208
Panama	420	1 063	-642
Caribbean countries	**7 948**	**8 115**	**-167**
Caribbean Community (CARICOM)	**5 367**	**5 390**	**-23**
Bahamas	60	419	-359
Barbados	89	150	-61
Belize	4	98	-94
Guyana	720	168	552
Haiti	16	305	-289
Jamaica	662	406	255
Suriname	540	138	402
Trinidad and Tobago	660	740	-80
Organization of Eastern Caribbean States (OECS)	35	239	-204
Antigua and Barbuda	4	58	-54
Dominica	5	22	-17
Grenada	2	21	-18
Saint Kitts and Nevis	2	47	-46
Saint Lucia	17	50	-32
Saint Vincent and the Grenadines	4	42	-38
Cuba	**214**	**703**	**-489**
Dominican Republic	**2 367**	**2 022**	**345**

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of UN Comtrade-International Trade Statistics Database.
[a] Figures for 2017 include information from mirror statistics in the cases of the Bahamas, Cuba, Dominica and Trinidad and Tobago.

CHAPTER III

Cross-border e-commerce as a new driver for exports

Introduction

The rapid growth of cross-border electronic commerce (e-commerce) has the potential to change traditional trade patterns in Latin America and the Caribbean, where, merchandise exports are concentrated in a small number of generally large firms that trade with just two or three markets. Moreover, the survival rate of exporting firms in the region is low: most of them —especially in the case of small and medium-sized enterprises (SMEs)— do not last longer than one year (Urmeneta, Park and Mulder, 2018). The rapid spread of the Internet and other digital platforms is drastically reducing international transaction costs, including those of communication, coordination and transport, while the trade enabled by these platforms brings buyers and sellers closer together and makes previously unattainable foreign markets accessible.

It has been proven that greater use of broadband in a country increases its ratio of trade to gross domestic product (GDP), and that the use of online stores by firms increases their exports and productivity (Freund and Weinhold, 2002; Riker, 2014; World Bank, 2016). The Internet is making it more likely that SMEs will trade internationally, which means exporting to multiple markets and surviving longer (eBay, 2017; Suominen, 2017). Cross-border e-commerce in Latin America and the Caribbean is estimated to be incipient, but has grown rapidly in recent years. Its continued expansion will depend on overcoming several obstacles that this type of trade faces in the region, which requires both national and regional policies.

This chapter provides an overview of cross-border e-commerce throughout the world, with special emphasis on participation by Latin American and Caribbean countries in this phenomenon. The first section provides the relevant definitions and discusses related conceptual issues, while the second addresses the dynamics of e-commerce in the region and worldwide, including cross-border electronic exchanges. The third section analyses the main challenges of cross-border e-commerce and describes the regulations prevailing in certain countries. The fourth section discusses various initiatives that are being pursued in the region to encourage this type of trade; and the chapter concludes with recommendations for promoting it.

A. Definitions and dimensions of cross-border e-commerce

Since the 1990s, various international organizations have defined domestic and cross-border e-commerce in different ways, both broadly (WTO, 1998) and narrowly (OECD, 2011; UNCTAD, 2016a). Statistical institutes of certain developed countries use more restricted definitions for their e-commerce surveys. For example, Eurostat (2002) and Statistics Canada (2018) define e-commerce as purchases made over the Internet or other computer networks, irrespective of how the purchase in question is paid for (see table III.1).

This chapter follows the IMF (2018) definition of cross-border e-commerce. This is broad enough to capture the different types of transactions that can be measured directly from balance of payments data, in various categories of information and communication technology (ICT) services, or services potentially enabled thereby (see table III.2). In the case of cross-border e-commerce involving the delivery of physical goods, the measurement largely draws on specialized surveys conducted in the countries that capture the different analog and digital purchase and sale modalities.

Table III.1
Definition of cross-border e-commerce according to selected international and national organization

Organization	Definition
WTO (1998)	The production, distribution, marketing, sale or delivery of goods and services by electronic means.
OECD (2011) and UNCTAD (2016a)	The sale or purchase of goods or services made through computer networks by methods specifically designed for the purpose of receiving or placing of orders.
IMF (2018)	Cross-border transactions that are digitally ordered, platform-enabled, or digitally delivered.
Eurostat (2002)	Making purchases of goods or services through computer networks.
StatCan (2018)	Purchases where the order is received via the Internet, although payment can be made by other means. Orders placed by telephone, fax or email are excluded.
US Census Bureau (2001)	Value of goods and services sold through computer-mediated networks.
USITC (2014)	International trade in which Internet and Internet-based technologies play an important role in facilitating the design, development, production, marketing, or delivery of products and services.
ICTSD and WEF (2016)	Trade that uses the Internet to search, buy, sell and deliver a good or service across borders.

Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Trade Organization, "E-commerce: work programme", Geneva, 1998 [online] https://www.wto.org/english/tratop_e/ecom_e/wkprog_e.htm; Organization for Economic Cooperation and Development (OECD), *Science, Technology and Industry Scoreboard 2011*, Paris, 2011; United Nations Conference on Trade and Development (UNCTAD), "In search of cross-border e-commerce trade data", *UNCTAD Technical Notes on ICT for Development*, Geneva, 2016; International Monetary Fund (IMF), *Measuring the Digital Economy: Staff Report,* Washington, D.C., 2018; Eurostat, *Community survey on ICT usage and e-commerce in enterprises,* Luxembourg, 2002; Statistics Canada, *Annual Non-Store Retail Survey*, Ottawa, 2018; United States International Trade Commission (USITC), *Digital Trade in the U.S. and Global Economies, Part 2*, Washington, D.C., August 2014 [online] https://www.usitc.gov/publications/332/pub4485.pdf; J. Meltzer, "Maximizing the opportunities of the Internet for international trade", *Policy Options Paper,* Geneva, International Centre for Trade and Sustainable Development/World Economic Forum (ICTSD/WEF), 2016.

Table III.2
Categories of trade in information and communication technology (ICT) services and services potentially enabled by them

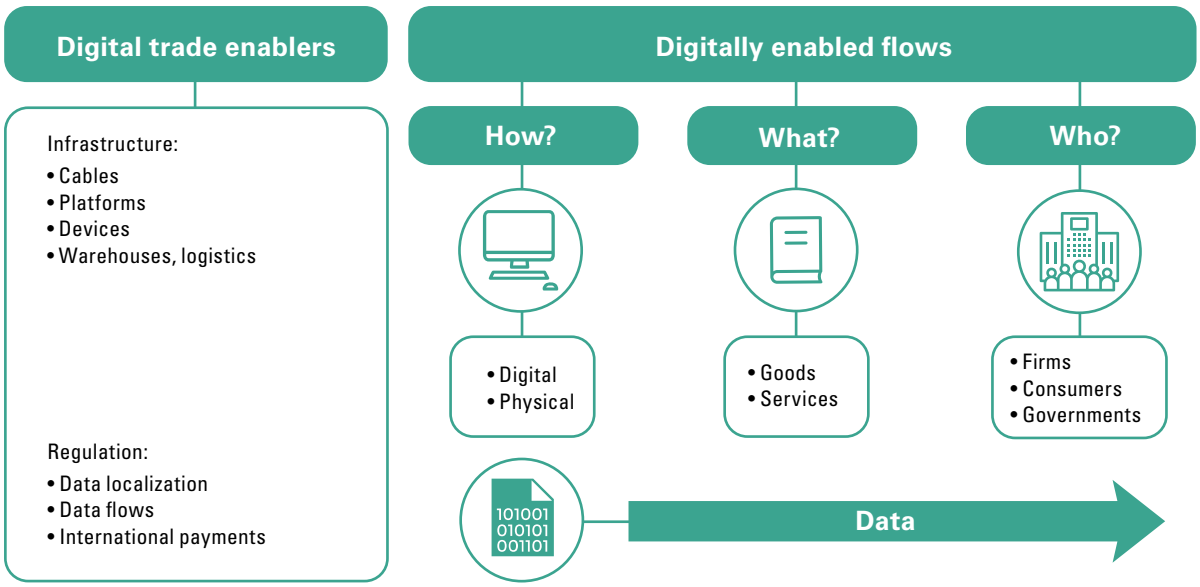
Balance of payments category	World Trade Organization (WTO) description
9.1	Telecommunications services
9.2.1-9.2.2	Computer services
9.3.1-9.3.2	Information services
7.1-7.2	Financial services
6.1.1-6.1.2-6.1-3-6.2-6.3-6.4.1-6.4.2	Pension and insurance services
8.1-8.2-8.3-8.4.1-8.4.2	Charges for the use of intellectual property
10.2.2	Advertising services, market research and opinion polls
10.3.1.1	Architectural, engineering and other technical services
10.1.1.1	Professional services and consulting in business administration
10.1.2	Research and development services
10.3.4-10.3.5	Technical, trade-related, and other business services
11.1.1	Audiovisual and related services

Source: United Nations Conference on Trade and Development (UNCTAD), *Information Economy Report 2017: Digitalization, Trade and Development*, Geneva, 2017.

Cross-border e-commerce can be divided into several types of transaction. Physical infrastructure (such as computers and cables) and soft infrastructure (such as regulations) affect cross-border data flows, which are at the heart of cross-border e-commerce. The growth of this type of trade thus depends largely on the availability of the necessary infrastructure. This consists mainly of ICT goods, computers, telecommunications equipment, data storage media and software, among other items. The expansion of ICT goods trade provides an indication of the development of infrastructure for e-commerce in the various countries. On the other hand, although e-commerce transactions are digital, actual delivery includes both digital and physical goods and services.

Another key dimension of e-commerce consists of the actors involved (firms, consumers and governments) which give rise to different types of transaction: from business to business (B2B), from business to consumer (B2C), from business to government (B2G) and from consumer to consumer (C2C). E-commerce can be classified in a variety of ways; and diagram III.1 displays the "how" (physical or digital delivery), the "what" (a good or a service) and the "who" (the actors) of cross-border e-commerce (López González and Jouanjean, 2017).

Diagram III.1
The three dimensions of cross-border e-commerce



Source: J. López González and M. Jouanjean, "Digital Trade: Developing a Framework for Analysis", *Trade Policy Papers*, No. 205, Paris, Organization for Economic Cooperation and Development (OECD), 2017.

This diagram affords a better understanding of when and how a cross-border electronic transaction is carried out, and of the challenges involved in its measurement and the relevant policies (López González and Jouanjean, 2017). This can be illustrated with three examples. The first is the purchase of a book through a foreign platform (such as Amazon). This is a B2C purchase enabled by a digital medium, but with physical delivery of the good purchased. As the book passes through customs, the transaction is recorded as part of traditional international trade, since there is no system that distinguishes between they different modalities of purchasing the book. The physical part of this purchase is subject to the rules of the General Agreement on Tariffs and Trade (GATT), while the associated services respond to those of the General Agreement on Trade in Services (GATS).

The second example is the purchase of a car journey through a foreign platform such as Uber. This consists of a C2C service that connects the car driver with a passenger and handles the payment for the journey. The transaction is made within the same country, but the associated services (the connection between the driver and the passenger, the payment and insurance) are sold from another country. Here the payment for a transport service is mixed with a fee for intermediation and insurance services, so is hard to register. Regulation is also complex because these transactions are subject to two types of GATS rules, namely those associated with cross-border trade and those related to sales made by the branches of foreign firms (supply modes 1 and 3, respectively).

A third example is a social network (such as Facebook) which involves the transfer of consumer data to and from the supplier. The network also uses the data to generate revenue through the sale of targeted advertising, so the delivery of consumer data to the firm is accompanied by a payment for B2B advertising services. While trade statistics should record the monetary flows associated with advertising revenues, they do not capture the data flows that underlie them.

B. The dynamics of cross-border e-commerce

1. E-commerce is spreading fast around the world

The rapid expansion of cross-border e-commerce is being driven mainly by the benefits it provides to both firms and consumers. The former have seen their transport, logistics, data transfer and information costs decrease, while the growing digital connectivity has increased the number of export destinations (López González and Jouanjean, 2017). In the case of consumers, the chief motivations for buying online include time savings, access to a wider range of supply and the speed of shipment and receipt.

One of the main challenges facing the study of cross-border e-commerce is that the data are difficult to access or else do not exist. Few countries register e-commerce officially and, given the different definitions of the phenomenon, in many cases the data are not comparable. Only a few developed countries, such as Australia, Canada, some members of the European Union, Japan, the United States and the Republic of Korea, maintain and use official statistics on the subject, although the latter has stopped compiling data on digital B2B sales. Among developing countries, only China collects official data on both types of e-commerce, while in others the information is compiled by chambers of commerce and business associations (UNCTAD, 2017); as in Argentina, Brazil and Chile. Given the lack of official data, a variety of private firms and consultants produce their own estimates. It is difficult to evaluate the quality of these data owing to a lack of transparency of the methodologies used to collect and process the information. Furthermore, most of these data are not freely available.

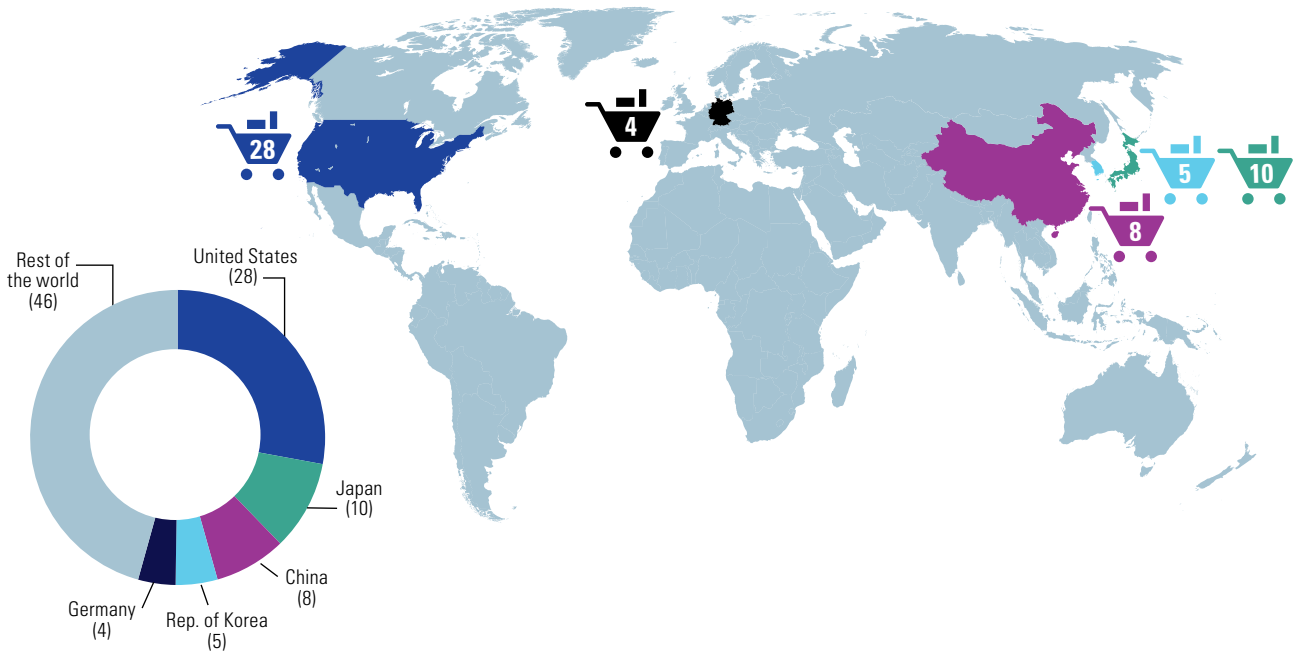
According to the United Nations Conference on Trade and Development (UNCTAD) (2017), five countries accounted for 54% of global online sales in 2015 (in decreasing order): the United States, Japan, China, the Republic of Korea and Germany (see figure III.1). The United States recorded sales of US$ 7.1 trillion, corresponding to 28% of total e-commerce worldwide (US$ 25.3 trillion). The available data suggest that this type of trade is more concentrated than its traditional counterpart.[1]

The B2B modality accounted for 89% of global e-commerce in 2015, and the remaining 11% was mostly B2C (UNCTAD, 2017). The 10 countries with the highest value of online sales accounted for 64% of both the B2B and the B2C segments. The Republic of Korea reported the largest B2B segment share in total online sales (96%), followed by Japan (95%), Spain (91%), the United States (90%) and Germany (90%). Within the same group of countries, the B2C segment attained its highest share in total online sales in China (31%), the United Kingdom (24%) and Australia (13%) (see figure III.2A).

B2C e-commerce can be broken down into domestic purchases and sales, and cross-border transactions. Canada and Germany were the countries where cross-border online imports accounted for the largest share of total B2C sales (15% and 10%, respectively) (see figure III.2B). In absolute terms, the largest markets for electronic cross-border imports were the United States, China, the United Kingdom and Germany, with values of roughly US$ 40 billion, US$ 39 billion, US$ 12 billion and US$ 9 billion, respectively, in 2015.

[1] In global goods and services trade, the top five exporting countries accounted for 37% and 36% of the total, respectively, in 2017 (WTO, 2018).

Figure III.1
Share of the five leading markets in global e-commerce, 2015
(Percentages)

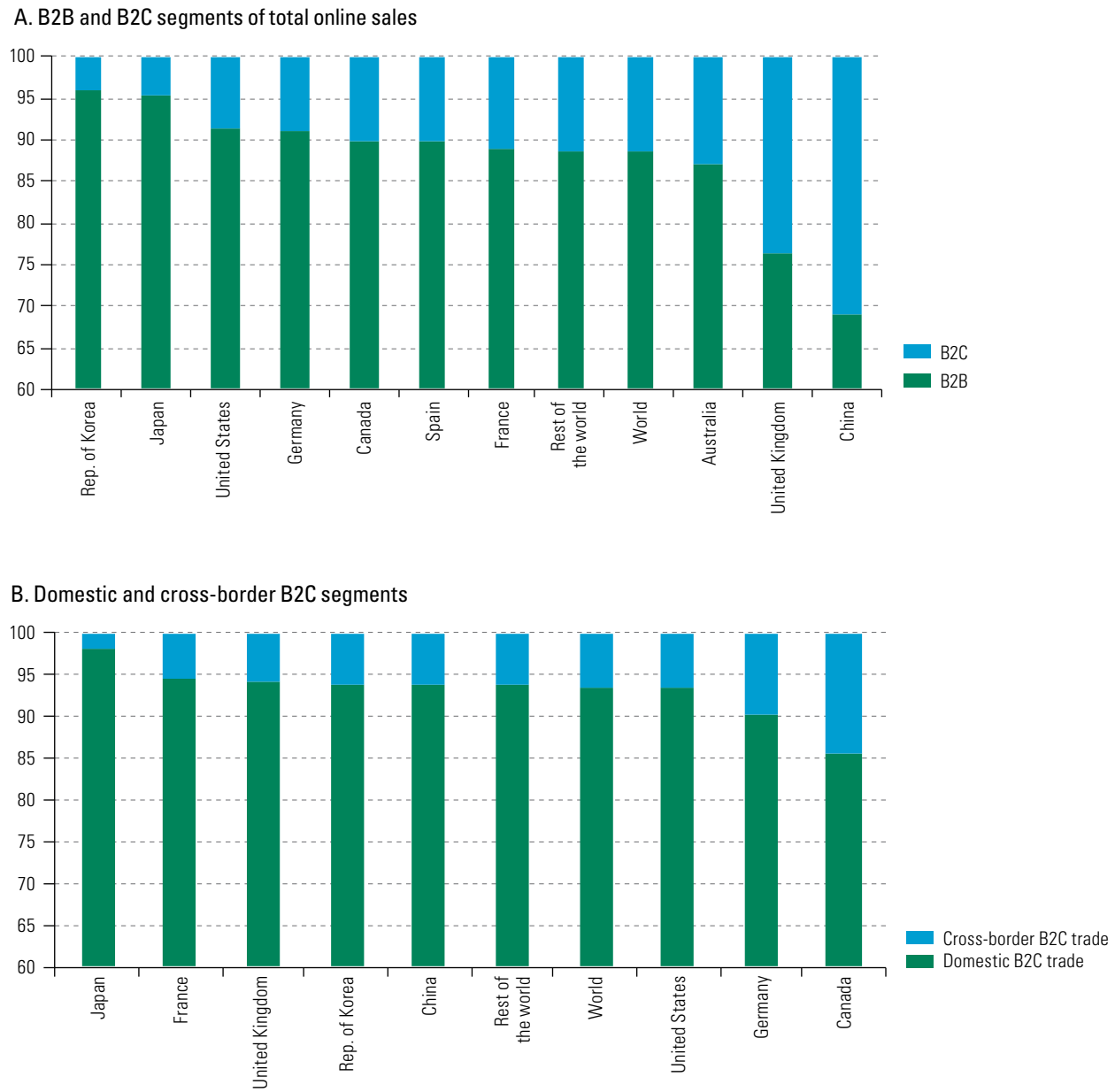


Source: United Nations Conference on Trade and Development (UNCTAD), *Information Economy Report 2017: Digitalization, Trade and Development*, Geneva, 2017; and eMarketer data.

Worldwide B2C e-commerce grew on average by 31% between 2014 and 2017, and is foreseen to maintain this pace until 2021, according to the "eMarketer" consultancy. Global B2C e-commerce is likely to increase in total from US$ 1.3 billion to US$ 4.9 billion. Moreover, cross-border e-commerce is likely to grow its share of total e-commerce from about 15% in 2014 to nearly 30% in 2020, as projected by the consultants AliResearch and Accenture (2016) (see figure III.3).

The total growth of B2C commerce between 2014 and 2020 seems to be heavily concentrated in Asia and the Pacific, since this region's share in global B2C e-commerce grew by most in that period, from 30% to 48%. This trend is replicated in the cross-border segment. In the case of Latin America and the Caribbean, total B2C e-commerce is projected to grow at an annual rate of 19%, with the cross-border share expanding at a rate of 44%. Thus, the region's share in cross-border B2C e-commerce worldwide looks set to double, from 2.6% (about US$ 6 billion) to 5.3% (around US$ 53 billion) (see diagram III.2).

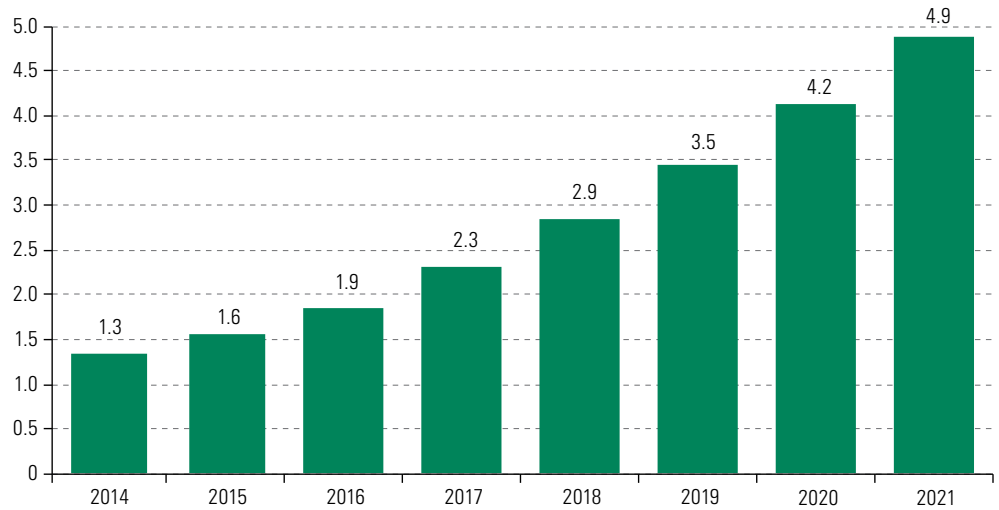
Figure III.2
Breakdown of total online and B2C sales, worldwide and in selected countries, 2015
(Percentages)



Source: United Nations Conference on Trade and Development (UNCTAD), *Information Economy Report 2017: Digitalization, Trade and Development*, Geneva, 2017.
Note: B2B refers to sales between businesses, while B2C refers to sales by businesses to consumers.

Figure III.3
Growth of global e-commerce between businesses and consumers (B2C) and share of domestic and cross-border commerce, 2014–2021

A. Global B2C e-commerce
(trillions of dollars)

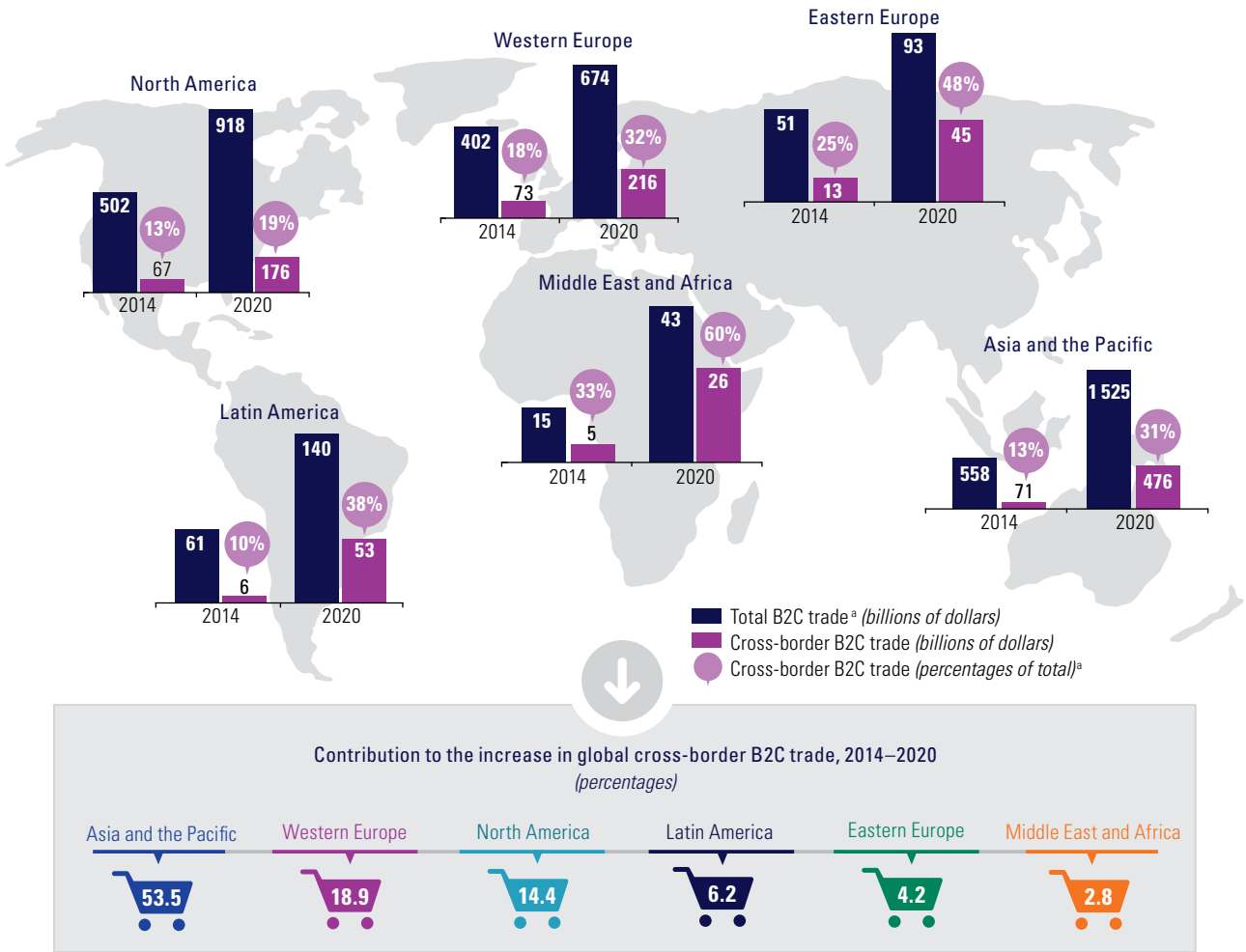


Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of eMarketer data.

B. Share of domestic and cross-border trade in global B2C e-commerce
(percentages)

Source: AliResearch and Accenture, *Global Cross Border B2C e-Commerce Market 2020: Report highlights & methodology sharing*, 2016 [online] http://unctad.org/meetings/en/Presentation/dtl_eweek2016_AlibabaResearch_en.pdf.
Note: The data for 2018 to 2021 in the case of figure A and those for 2016 to 2020 in figure B are projections. B2C refers to sales by businesses to consumers.

Diagram III.2
Share of the world's regions in global e-commerce between businesses and consumers (B2C), 2014 and 2020
(Billions of dollars and percentages)

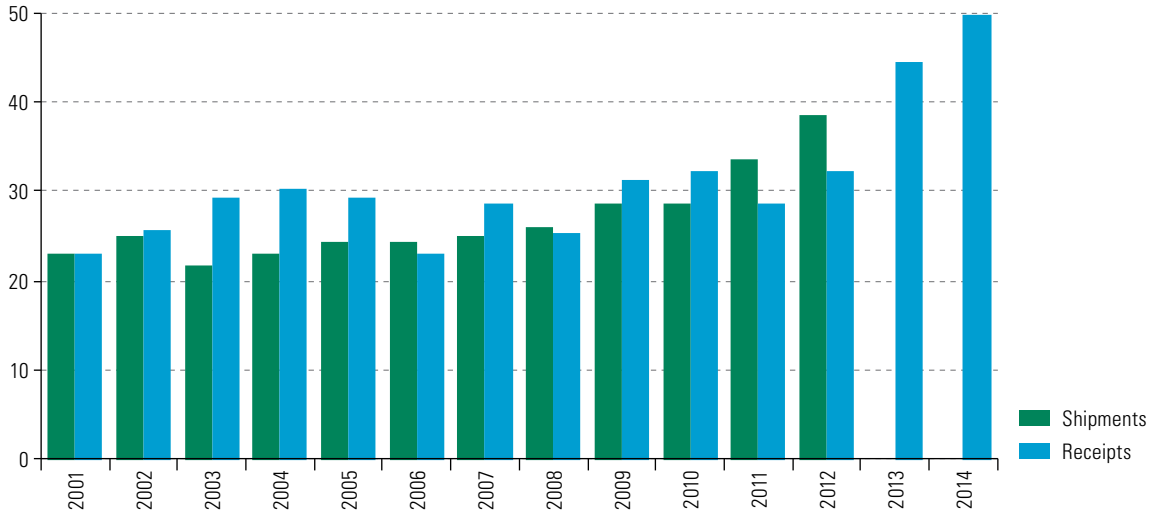


Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of AliResearch and Accenture, *Global Cross Border B2C e-Commerce Market 2020: Report highlights & methodology sharing,* 2016 [online] http://unctad.org/meetings/en/Presentation/dtl_eweek2016_AlibabaResearch_en.pdf.
[a] The total refers to domestic and international purchases (imports).

The rapid growth of international shipments and receipts of small packages or parcels since 2010 provides complementary evidence of the recent rapid expansion of cross-border B2C e-commerce. Most goods purchased abroad by consumers through online platforms are delivered this way (see figure III.4). Nonetheless, despite this growth, international shipments and receipts still only accounted for 2% of total small package shipments in 2014.

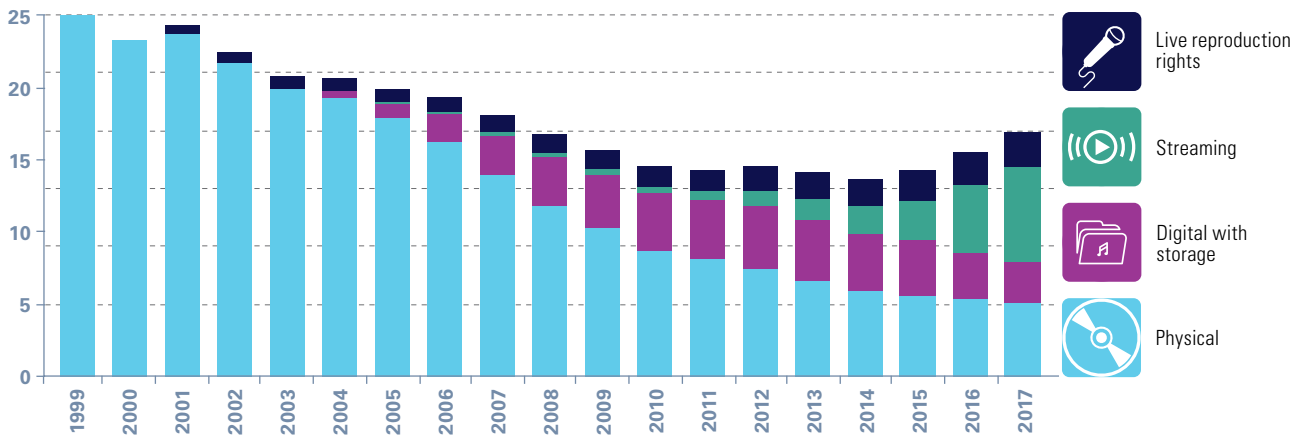
E-commerce has had a major impact in several industries and has been important, especially in those in which products and services —such as film, music and video games— are delivered through digital platforms. Revenues from music recorded and sold digitally, both with and without streaming, accounted for over half of the revenues generated in this segment in 2017 (see figure III.5). Digital revenues grew by 19.1% in that year, accounting for more than half of the music industry's total global income (IFPI, 2018).

Figure III.4
International shipments and receipts of small packages worldwide, 2001–2014
(Billions of units)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of data from Universal Postal Union (UPU).
Note: Since 2013, it has been impossible to calculate global shipments because of a lack of data from the United States. The numbers of shipments and receipts do not coincide because not all countries declare both flows and there are lags when declaring them at the end of the year, among other reasons.

Figure III.5
Revenues of the global music industry by type of media, 1999–2017
(Billions of dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of IFPI, *Global Music Report 2018. Annual State of the Industry*, 2018 [online] http://www.ifpi.org/downloads/GMR2018.pdf.

2. Trends in the region

Most countries do not publish or collect data on domestic or cross-border e-commerce. Only few statistical offices are implementing good practices for measuring e-commerce based on the experiences of countries such as the United States, the Republic of Korea and members of the European Union.[2] In the absence of official sources, some consultancy firms produce estimates and forecast trends in e-commerce in the region.

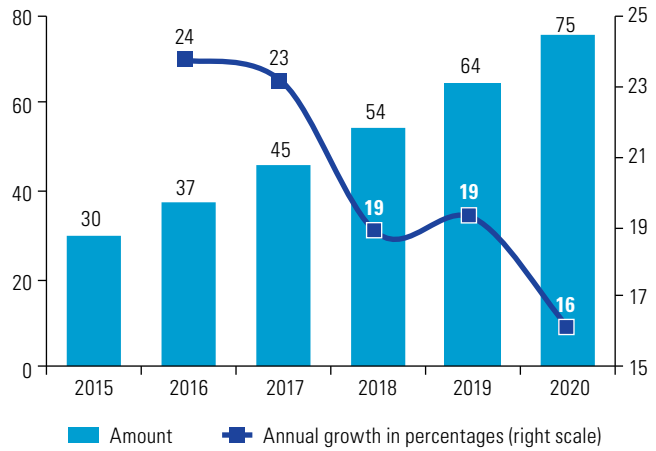
[2] For example, Mexico is working on a survey of firms that sell online, both in the domestic market and abroad; and Peru has an economic census that provides partial information.

(a) B2C e-commerce could slow down

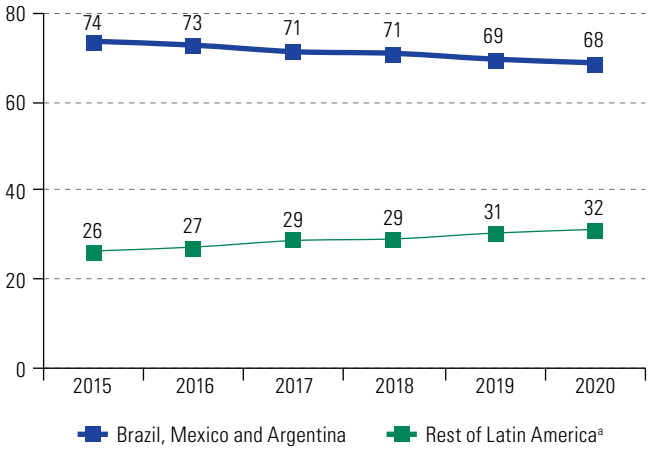
For 2015-2020, the consultancy firm eMarketer (2017) is forecasting a slowdown in the growth rate of regional B2C e-commerce (both domestic and cross-border) (see figure III.6A). This is partly because digital platforms for this type of trade are now more mature and more widespread, so that the base of comparison is larger and the room for growth is smaller. eMarketer projects average annual growth of 20% for 2016–2020, very similar to the 19% forecast by AliResearch and Accenture (2016). Nonetheless, the volume of e-commerce estimated by the former consultant is much larger than that of the latter. Argentina, Brazil and Mexico jointly accounted for 73% of the region's e-commerce in 2016.[3] In terms of individual country shares in regional e-commerce, Brazil leads with 42%, followed by Mexico and Argentina (see figure III.6D).

Figure III.6
Latin America (selected countries): B2C e-commerce, 2015–2020

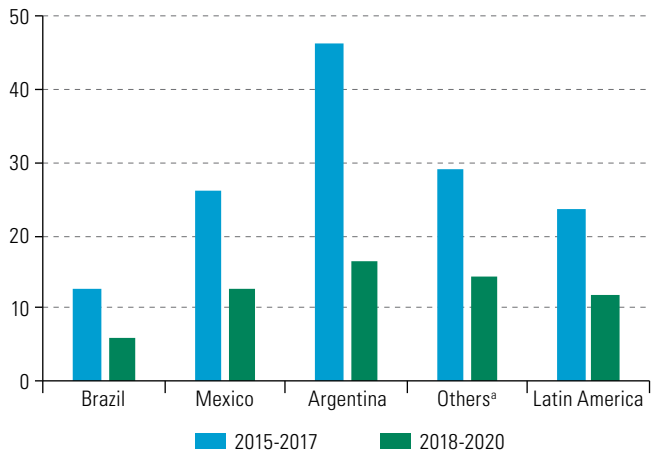
A. Growth
(billions of dollars and percentages)



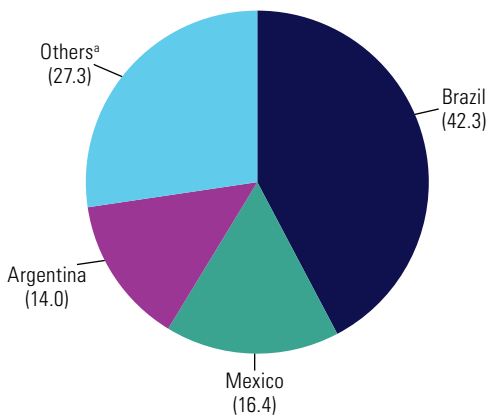
B. Share in regional sales
(percentages)



C. Growth by country
(percentages)



D. Share within the region, 2016
(percentages)

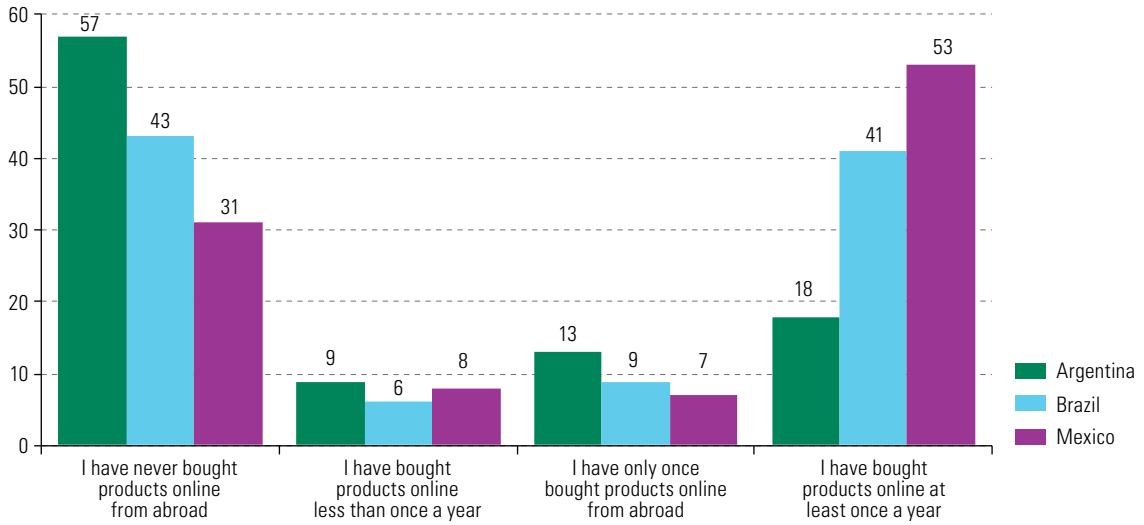


Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of eMarketer data, 2017.
Note: The data for 2017 to 2020 are projections.
[a] The eMarketer report does not include all the countries of Latin America and the Caribbean, but only the main economies; the rest are aggregated.

[3] The eMarketer report does not include all the countries of Latin America and the Caribbean, but only the largest economies; the others are included as an aggregate.

The countries of the region display substantial differences with respect to B2C cross-border online purchases (imports). For example, according to the Consumer Barometer with Google survey (Google, 2017), over half of online consumers in Mexico bought a product from abroad at least once in 2017, compared to 41% in Brazil and 18% in Argentina. In contrast, over half of Argentine consumers have never made a purchase abroad, compared to 43% in Brazil and 31% in Mexico (see figure III.7). The four product lines most frequently purchased from abroad are clothing, accessories and footwear; digital cameras, camcorders and audio devices; books, CDs, DVDs and video games, and cosmetics and beauty products.

Figure III.7
Argentina, Brazil and Mexico: international B2C online shopping habits, 2017
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of "Do people use Internet for personal purpose?", Consumer Barometer with Google, 2017 [online] https://www.consumerbarometer.com/en/.

B2C e-commerce in Latin America and the Caribbean is dominated by firms from outside the region, the largest and best known being Amazon, Apple and Alibaba, although there are also some major firms of regional origin. Table III.3 identifies several firms that serve the B2C e-commerce segment within the region. The leading firm of regional origin is Mercado Libre, which had over 235 million users in 2018 and a presence in many of the region's countries. Reflecting the size of the market, the other firms listed in the table are from Brazil, and they operate in other large markets, such as Argentina and Mexico.

In Latin America and the Caribbean, B2C cross-border online purchases of physical goods through electronic platforms (imports) have outpaced the corresponding sales (exports). As a large part of these goods are delivered via international parcel shipments, it can be assumed that there is a direct relationship between shipments and receipts of postal packages and B2C e-commerce. As of 2010, receipts of small international packages outpaced cross-border shipments (see figure III.8A);[4] and domestic B2C online sales in the region grew faster than cross-border sales. This is suggested by data on domestic and international package shipments: the former outpaced the latter for most of the 2000-2016 period (see figure III.8B). As a result, Latin America's share of global cross-border parcel shipments declined, while the opposite was true for domestic parcels (see figure III.8C). In the region, cross-border e-commerce seems to have boosted imports, but it has not given renewed impetus to export growth.

[4] Nonetheless, the data do not make it possible to confirm the variation in package shipments that is attributable to e-commerce.

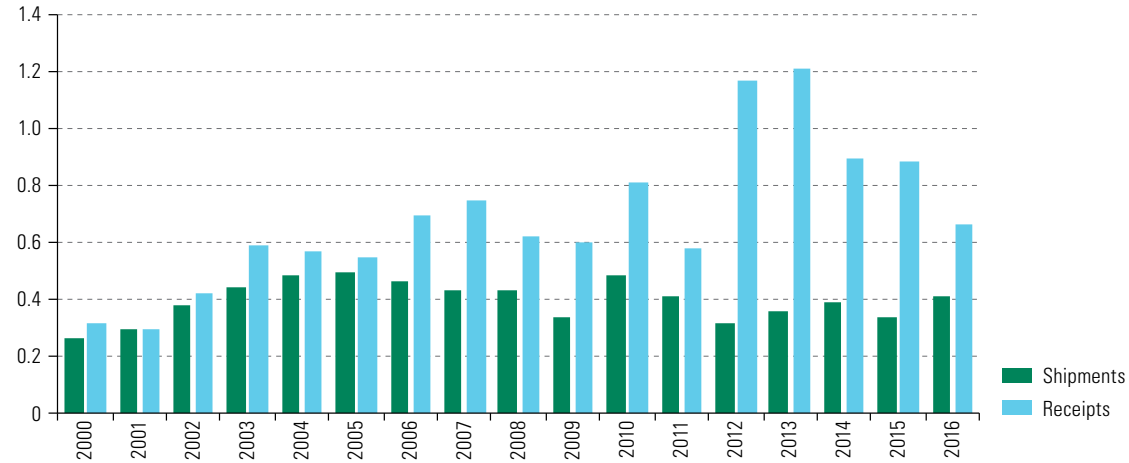
Table III.3
Latin America and the Caribbean: leading e-commerce firms between firms and consumers (B2C), January 2016

Firm	Logo	Headquarters	Description	Hits[a]
Mercado Libre		Argentina	Platform for buying and selling products. It encompasses several firms with which it provides financial and parcel remittance services. It is found in most countries of the region.	51
B2W Digital		Brazil	Under the Americanas.com, Submarino, Shoptime and Sou Barato brands, it supplies electronic products, computers, telephony, games and books through the Internet.	19
NovaPontocom		Brazil	Online retail stores selling electronic products in the Brazilian market.	19
Amazon Sites		United States	Intermediation platform for the sale of merchandise and content. It currently incorporates its own products, such as the Kindle electronic reader.	17
BuscaPE Company		Brazil	Compares products in e-commerce stores.	15
Walmart		United States	Operates supermarkets, hypermarkets, pharmacies, mobile commerce and purchase and sale supercenters. It has e-commerce websites in 28 countries, including Chile and Colombia.	13
Alibaba.com		China	Global wholesale and retail trade platform (through Aliexpress). Distributes and sells consumer products, electronics, food and chemical products.	13
Appl.com Worldwide Sites		United States	Designs, manufactures and markets mobile telephony and computer devices. In addition, it sells software services, accessories, network solutions, and digital content and applications.	12
MagazineLuiza		Brazil	Retail sales of consumer goods, with retail trade segments, financial operations, insurance operations and consortium management.	10
Netshoes Group		Brazil	Online retailer of sports and personal training articles. All of its transactions are done from its websites, such as netshoes.com, shoestock.com and zattini.com. It has a presence in Argentina and Mexico.	10

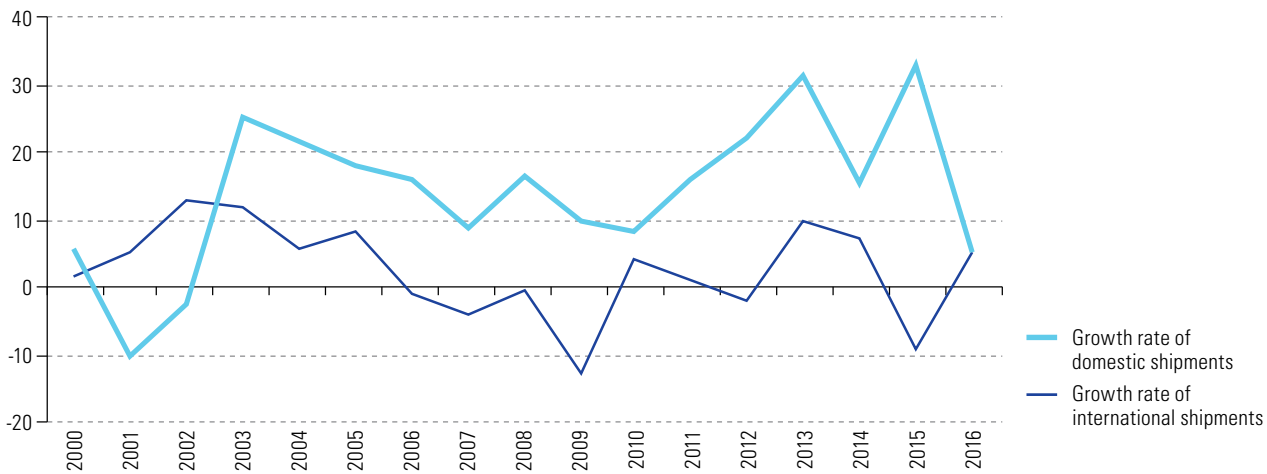
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Statista data.
[a] Millions of hits in 2016.

Figure III.8
Latin America: shipments and receipts of national and international packages, 2000–2016

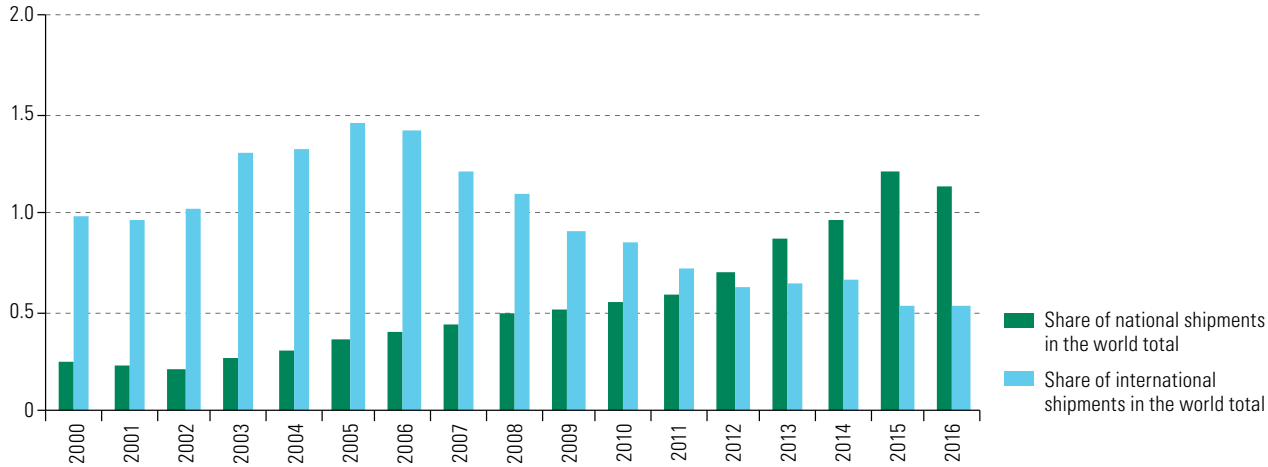
A. International shipments and receipts
(billions of packages)



B. Annual growth
(percentages)



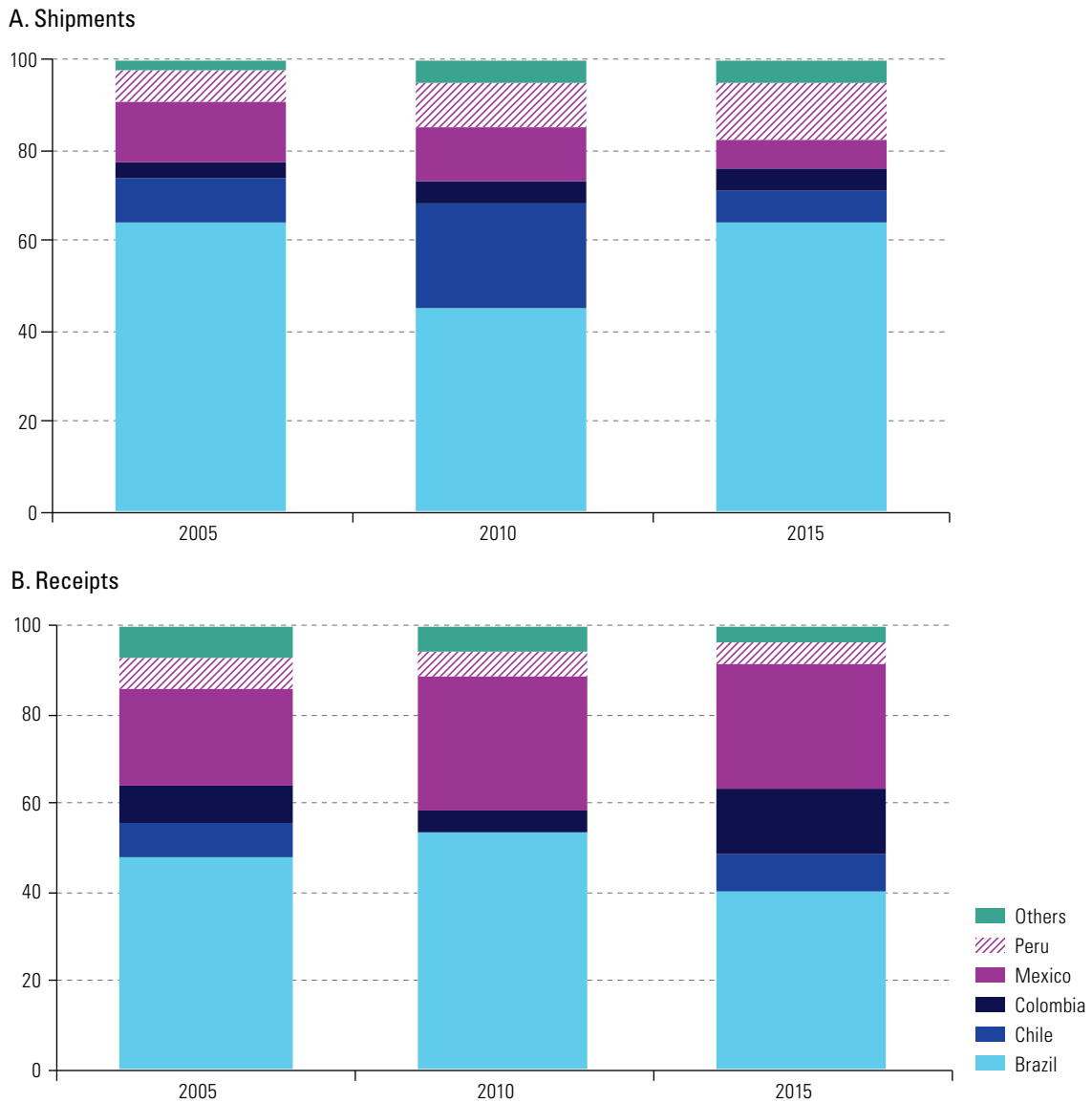
C. Share of world shipments
(percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of data from Universal Postal Union (UPU).

In 2015, Brazil generated nearly two thirds of small parcel shipments and 40% of the corresponding receipts in the region (see figure III.9). Mexico's share in receipts is almost twice its share of shipments. Chile, Colombia and Peru also have significant shares in both flows, while the other countries of the region have little weight in package shipments and receipts.

Figure III.9
Latin America (selected countries): share of countries in international parcel shipments and receipts, 2005–2015
(Percentages)



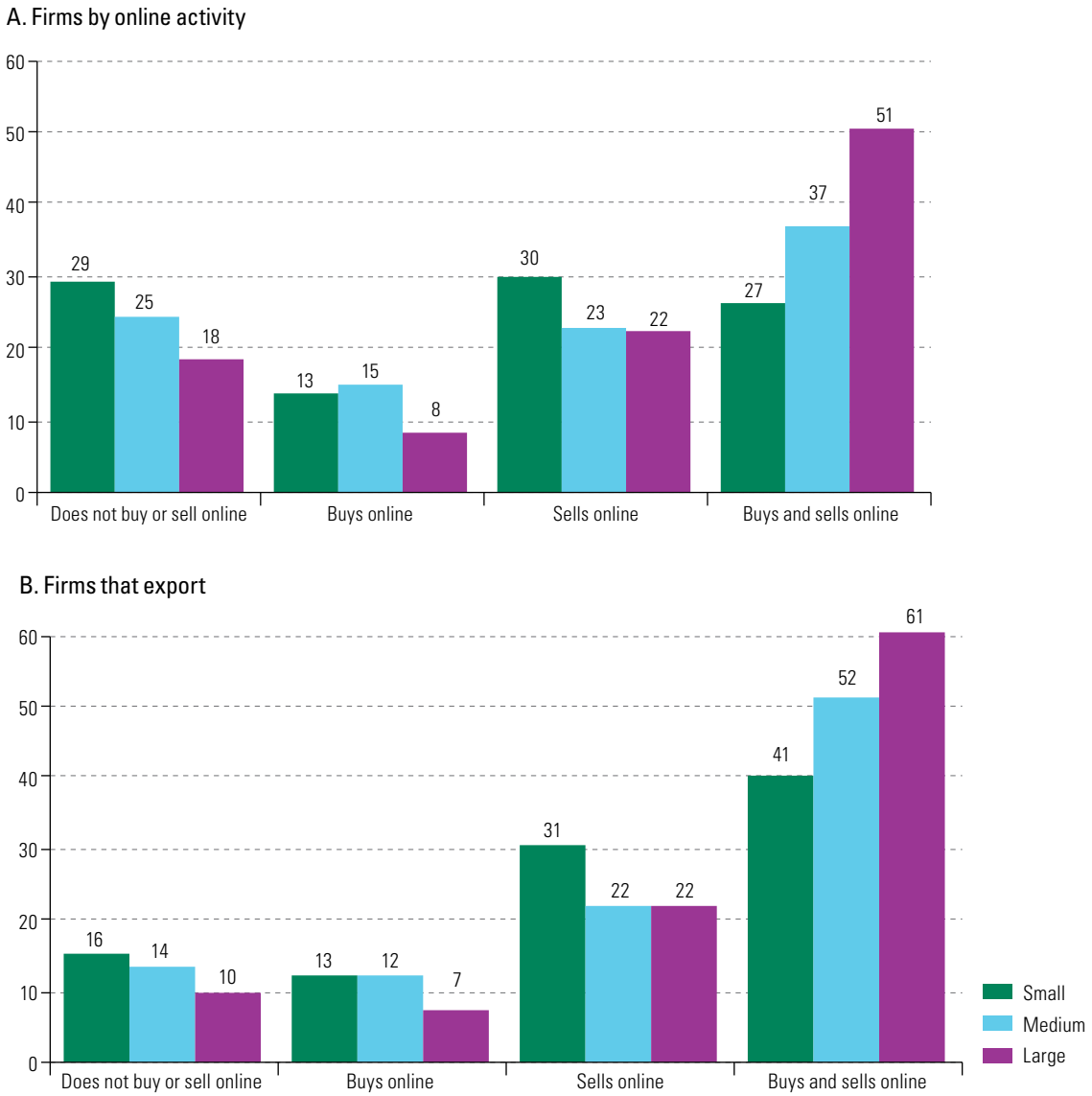
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of data from Universal Postal Union (UPU).
Note: The countries included in the "Others" category are the Bolivarian Republic of Venezuela, Ecuador and Paraguay.

In the region, firms participate more in cross-border e-commerce when they are larger and export more. This fact emerges from a survey conducted by Nextrade Group on the link between e-commerce and international trade for 1,430 firms of different sizes drawn from nine of the region's countries (Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, Paraguay and Uruguay).[5] Just over half (51%) of large firms participate

[5] The survey is indicative only, because it is not based on a representative sample of firms in the region. It is also biased because it focuses on firms that use the Internet frequently and also used this medium to answer the survey.

in e-commerce as both buyers and sellers of goods, while medium-sized and small firms have a high participation rate in sales only. Irrespective of their size, more firms trade online than do not (see figure III.10A). Of the total number of firms that export, over half of them both buy and sell online (see figure III.10B).

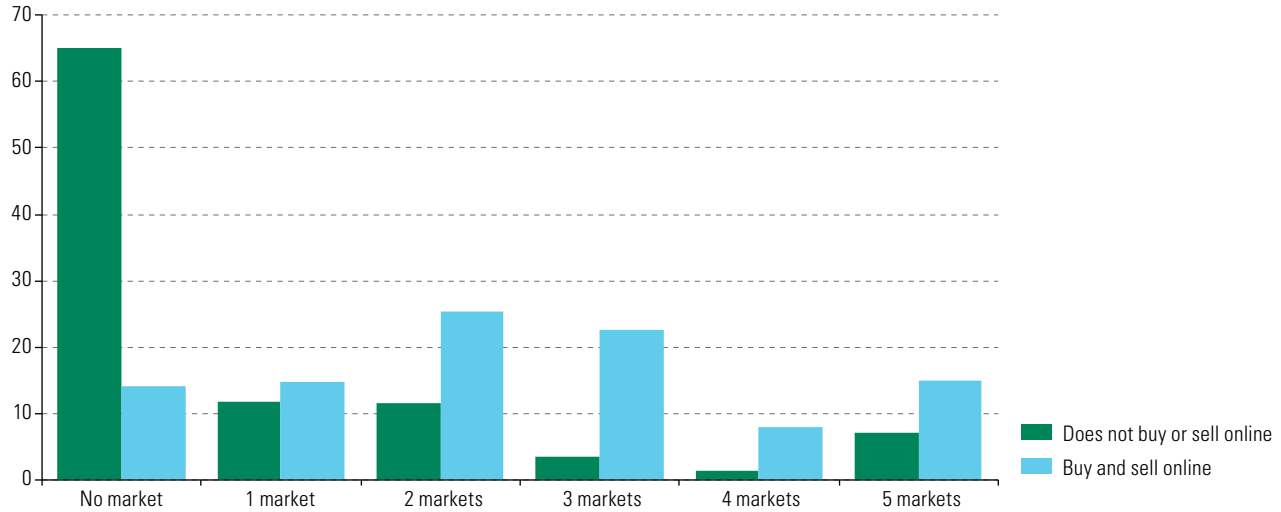
Figure III.10
Latin America (9 countries):[a] proportion of surveyed firms that trade online, 2017
(Percentages of total firms, by online presence)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Nextrade Group, *Ecommerce Development Survey and Index,* El Segundo, 2017.
Note: Firms are considered small if they have fewer than 50 employees, medium if they have between 51 and 250 employees, and large if they have more than 250.
[a] Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru and Uruguay.

Firms that buy and sell online export to a wider range of markets than those that do not. Those that sell online have more diversified export markets, since 49% of surveyed firms that sell online export to three or more markets, compared to 12% of those that trade in the traditional way only (see figure III.11).

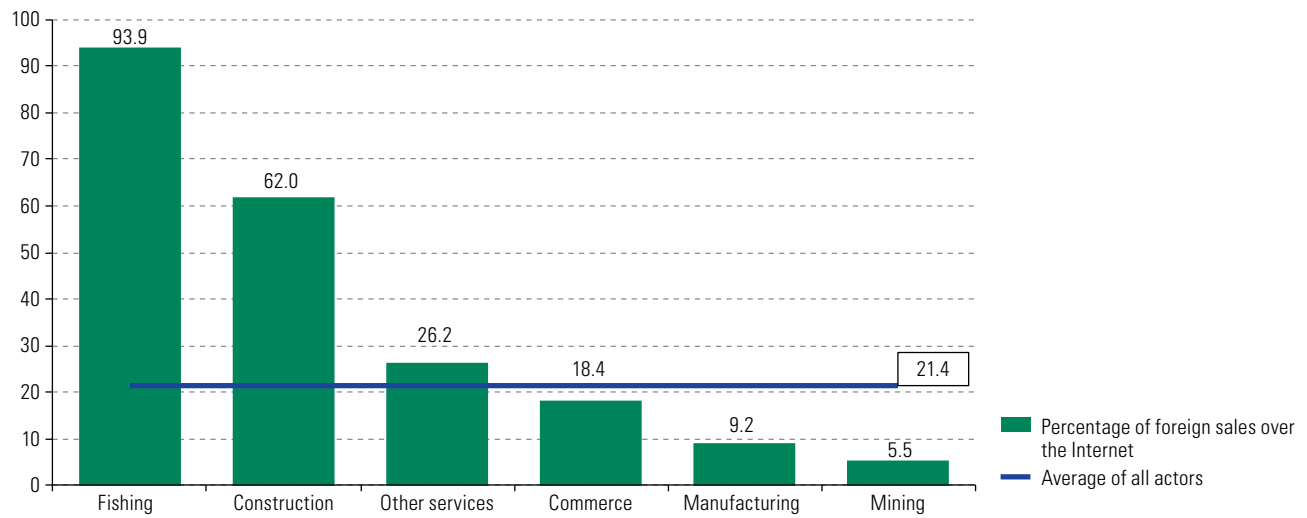
Figure III.11
Latin America (9 countries):[a] distribution of firms by the number of markets to which they export, 2017
(Percentages of total firms, by online presence)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Nextrade Group, *Ecommerce Development Survey and Index*, El Segundo, 2017.
[a] Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru and Uruguay

In Peru, 24% of firms use the Internet to sell their products and services. This country is one of the few in the region that includes questions on e-commerce in its surveys, censuses of economic establishments or interviews with SMEs. Sixteen per cent of firms make purchases over the Internet (domestic e-commerce), while 5% sell through this medium. Of the latter, 14% undertook cross-border online sales (Ministry of Production of Peru, 2017), the largest proportion being in the fishing, construction, other services, and trade sectors (see figure III.12). One third of Peruvian firms carried out commercial promotion activities through the Internet in 2016.[6] This is the chief means of promoting their products and represents 41% of the amount spent on the main forms of business advertising.

Figure III.12
Peru: share of cross-border B2B online sales, by sector, 2016
(Percentages of total sales on the Internet)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of National Institute of Statistics and Informatics, National Enterprise Survey 2016.

[6] The National Institute of Statistics and Informatics (INEI), along with the Ministry of Production, has conducted business surveys that aim to collect statistical data and identify the characteristics of the organization of technologies, their access and use, including e-commerce, in both the domestic and the international markets (INEI, 2015, 2016 and 2017).

In Ecuador, some universities and companies have made efforts to measure the rate of digital media use by consumers. In 2017, Universidad de Especialidades Espíritu Santo (UESS), with support from the Ecuadoran Chamber of Electronic Commerce, surveyed 1,284 people, of whom 85% said they had made purchases over the Internet. Among the key findings are that consumers tend to buy products from international online stores more frequently than from those in Ecuador (Dakdik, Ottati and Pueyrredon, 2017).

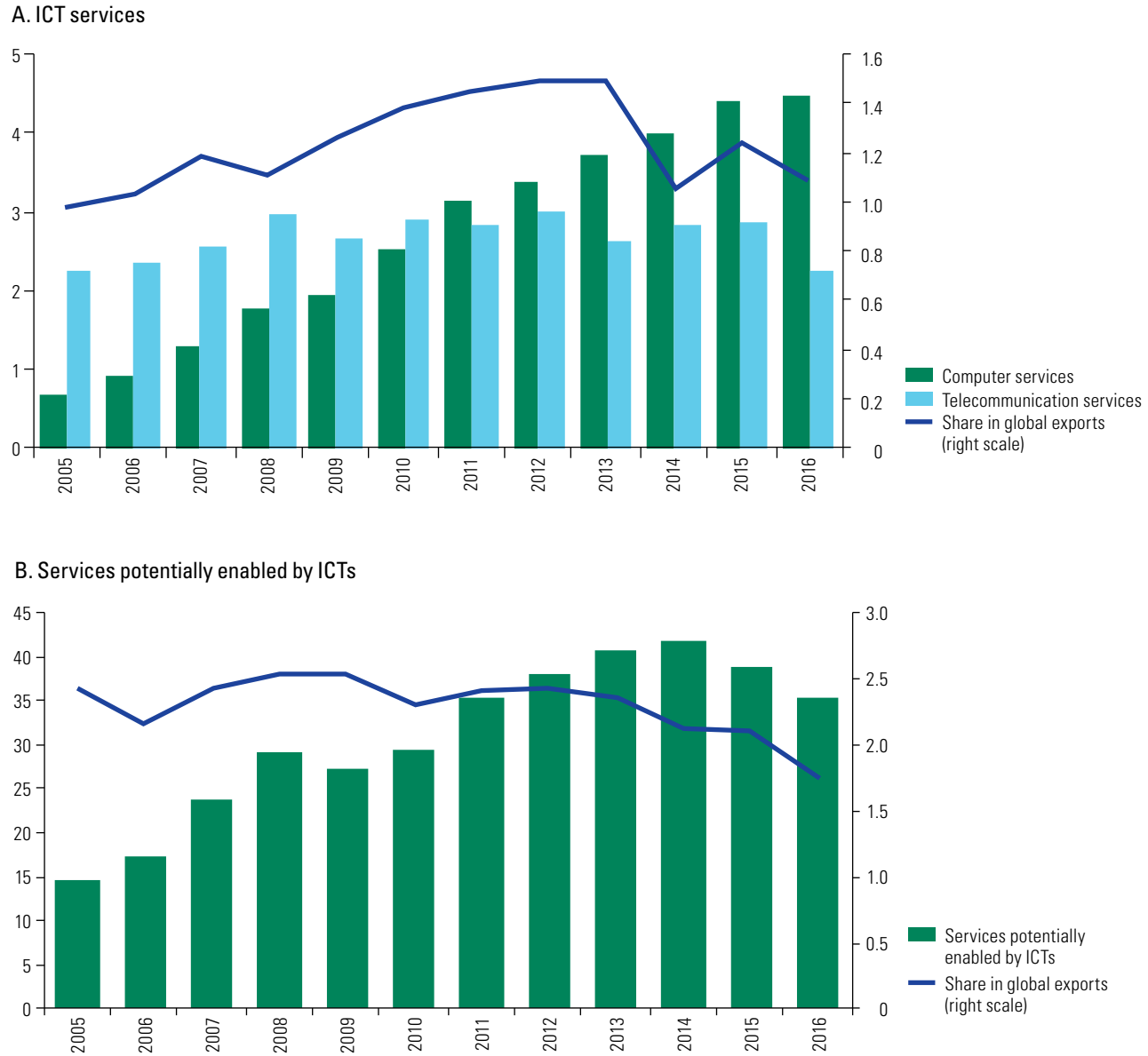
(b) Exports of digital services are highly concentrated

The region's exports of ICT services, and of services potentially enabled by them, have grown rapidly (see their classification in table III.2) between 2005 and 2010, representing a key portion of all digital services exported. Since then, exports of computer services have continued to grow, while those of telecommunications services have decreased. As a result, the region's share of global exports of ICT services increased until 2010, but then faltered (see figure III.13A). Moreover, exports of services potentially enabled by ICT grew until 2014 but then fell, causing the region's share in world trade to stall and then shrink (see figure III.13B). As a result, the trade balance of both service categories deteriorated between 2005 and 2014; then both deficits narrowed in 2015 and 2016, mainly owing to a drop in imports.

Regional exports of both service categories are highly concentrated in a small number of countries, with Argentina, Brazil and Costa Rica accounting for 60% of regional exports of ICT services in 2016. In 2005, their joint share was just 31%, while Mexico alone generated 23% of regional shipments. Colombia, Ecuador and Guatemala also lost share in regional exports significantly. In the case of regional exports of services potentially enabled by ICTs, Brazil is the lead player, accounting for over half of the total amount, with Argentina, Mexico and Costa Rica far behind (see figure III.14).

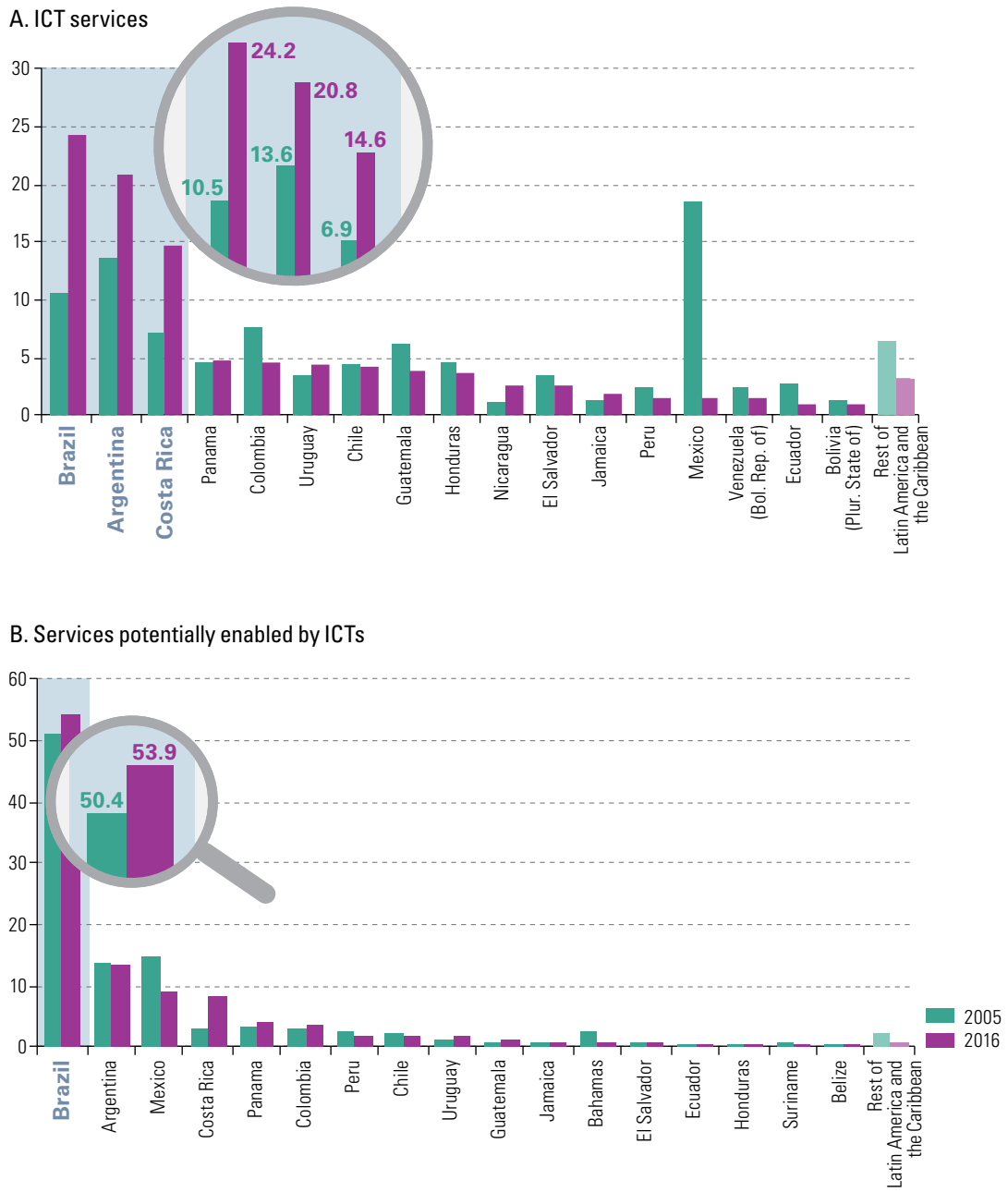
A detailed study in this area for Costa Rica, conducted by its central bank and UNCTAD, found that exports of management, administration and back-office services accounted for 62% of the services provided by ICTs in 2016. These were mostly call-centre services. The survey also shows that 91% of total exports of engineering services, related technological services and research and development were made through ICT networks. Around 68% of these exports were sold to the United States (Torres Mora, 2018; UNCTAD, 2018).

Figure III.13
Latin America and the Caribbean: exports of ICT services and services potentially enabled by ICT, 2005–2016
(Billions of dollars and percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of statistics from World Trade Organization (WTO).

Figure III.14
Latin America and the Caribbean: ranking of countries that export ICT services and services potentially enabled by them, 2005–2016
(Percentages of total regional exports of each category)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of statistics from World Trade Organization (WTO).

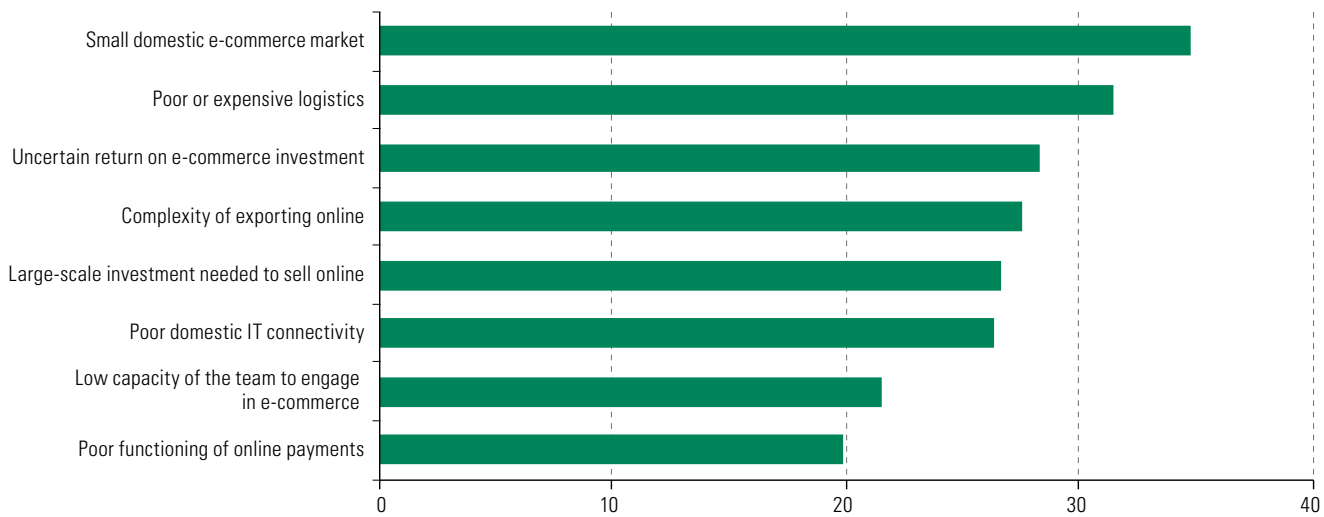
C. Factors affecting cross-border e-commerce

One of the key determinants of cross-border e-commerce is the digital ecosystem prevailing in the countries in question. This is understood as the set of infrastructures and services (platforms, access devices) associated with the provision of content and services over the Internet (Katz, 2015). National regulations on e-commerce and the differences between them, along with the payment systems and the logistics for this type of trade, are also major determinants. Before analysing these factors in the region, a review is made of the perception of a group of firms and consumers as to the most critical elements for the development of cross-border e-commerce.

1. Firms and consumers identify different challenges

In Latin America, small businesses face a number of challenges when starting to sell online, both inside and outside their country: the small size of the domestic e-commerce market, the associated logistics and the complexity of selling online in foreign markets (see figure III.15). These data come from a survey conducted by Nextrade Group on 1,362 firms of different sizes in six countries of the region (Argentina, Brazil, Chile, Colombia, Mexico and Uruguay) between 2016 and 2017.[7] Although most of these firms are actively involved in domestic and cross-border e-commerce, a group that does not yet buy or sell online is also included.

Figure III.15
Latin America (selected countries): reasons most cited by small businesses for not participating in e-commerce, 2016–2017
(Percentages of the total of small firms that do not sell online)

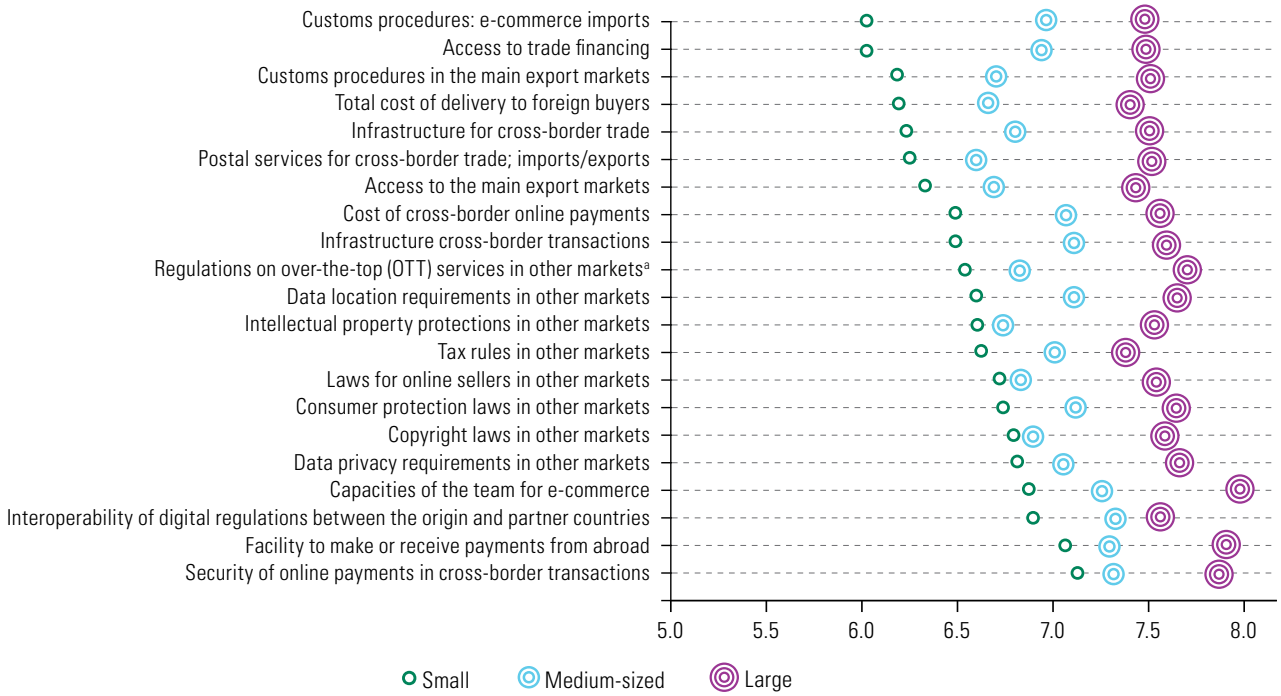


Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Nextrade Group, *Ecommerce Development Survey and Index,* El Segundo, 2017.
Note: The countries are: Argentina, Brazil, Chile, Colombia, Mexico and Uruguay. Small firms are defined as those with less than 50 workers. The percentages do not add up to 100, because firms can cite more than one challenge.

[7] The survey is indicative only, because it is not based on a representative sample of firms in the region. It is also biased towards firms that already trade online (74.7% of the total number of firms surveyed).

For small businesses that are already selling online, the toughest challenges are trade financing, logistics (such as customs procedures and postal services) and online payments (see figure III.16). These data come from the same survey, where firms were asked to rate certain variables related to the business climate for cross-border e-commerce, on a scale of 1 (very bad) to 10 (excellent). Traditional market access barriers also continue to affect the firms. The digital regulations of other countries and interoperability of the regulations with those of key trading partners are also major concerns for small-scale exporters. The large firms score similarly in all areas, although they put less emphasis on taxation and customs procedures. While large firms still face the traditional challenges of trade, they also note that compliance costs in respect of digital regulations that differ across the region's countries reduce the amount of e-commerce done between them.

Figure III.16
Latin America (selected countries): perceptions of the quality of the environment for cross-border e-commerce, by firm size, 2016–2017
(From 1=very bad to 10=excellent)



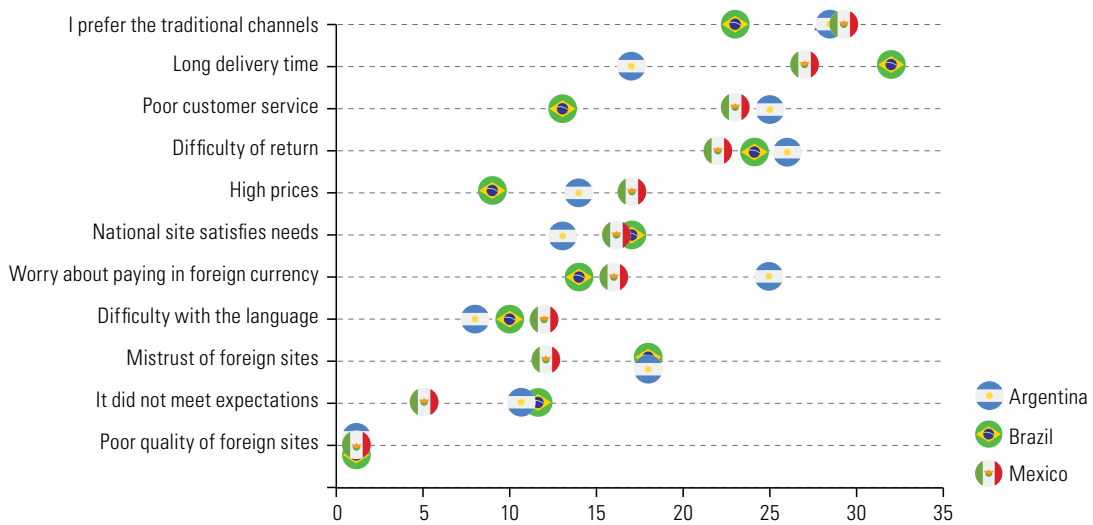
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Nextrade Group, *Ecommerce Development Survey and Index,* El Segundo, 2017.
Note: The countries are: Argentina, Brazil, Chile, Colombia, Mexico and Uruguay. Firms are considered small if they have fewer than 50 employees, medium-sized if they have between 51 and 250, and large if they have more than 250. The percentages do not add up to 100, because firms can cite more than one challenge.
[a] Over-the-top (OTT) refers to digital platforms that transmit data to electronic devices connected to the Web, such as laptops, phones, and tablets.

Other studies conducted for the region, based on samples of different firms, show similar results. Suominen (2017) surveyed some 300 firms registered in the Connect Americas platform of the Inter-American Development Bank (IDB), from different sectors and with sales generally below US$ 5 million in 2016. The results show that the main barriers to cross-border e-commerce are poor logistics, difficult compliance with customs requirements, regulations (such as uncertain legal liability, data location requirements, data protection and intellectual property rules) and poor online payment systems. Another important constraint, especially for SMEs, is access to financing in general and for e-commerce in particular. Another study finds that the main e-commerce challenges faced by SMEs are consumers' perceptions of the lack

of security of personal data and online payment systems, and the regulations for doing business online (Zwillinberg, Field and Dean, 2014).

From the standpoint of users who make cross-border purchases, the key challenges are delivery times, the ability to return purchased items and potential issues with customer service. These challenges were cited by consumers in Argentina, Brazil and Mexico. Despite certain common perceptions, however, there are a number of differences: while consumers in Brazil are worried about delivery times, those in Argentina identify customer service and payment in a foreign currency as their main challenges (see figure III.17).

Figure III.17
Argentina, Brazil and Mexico: consumers' perception of the challenges of cross-border online purchases, 2017
(Percentages)



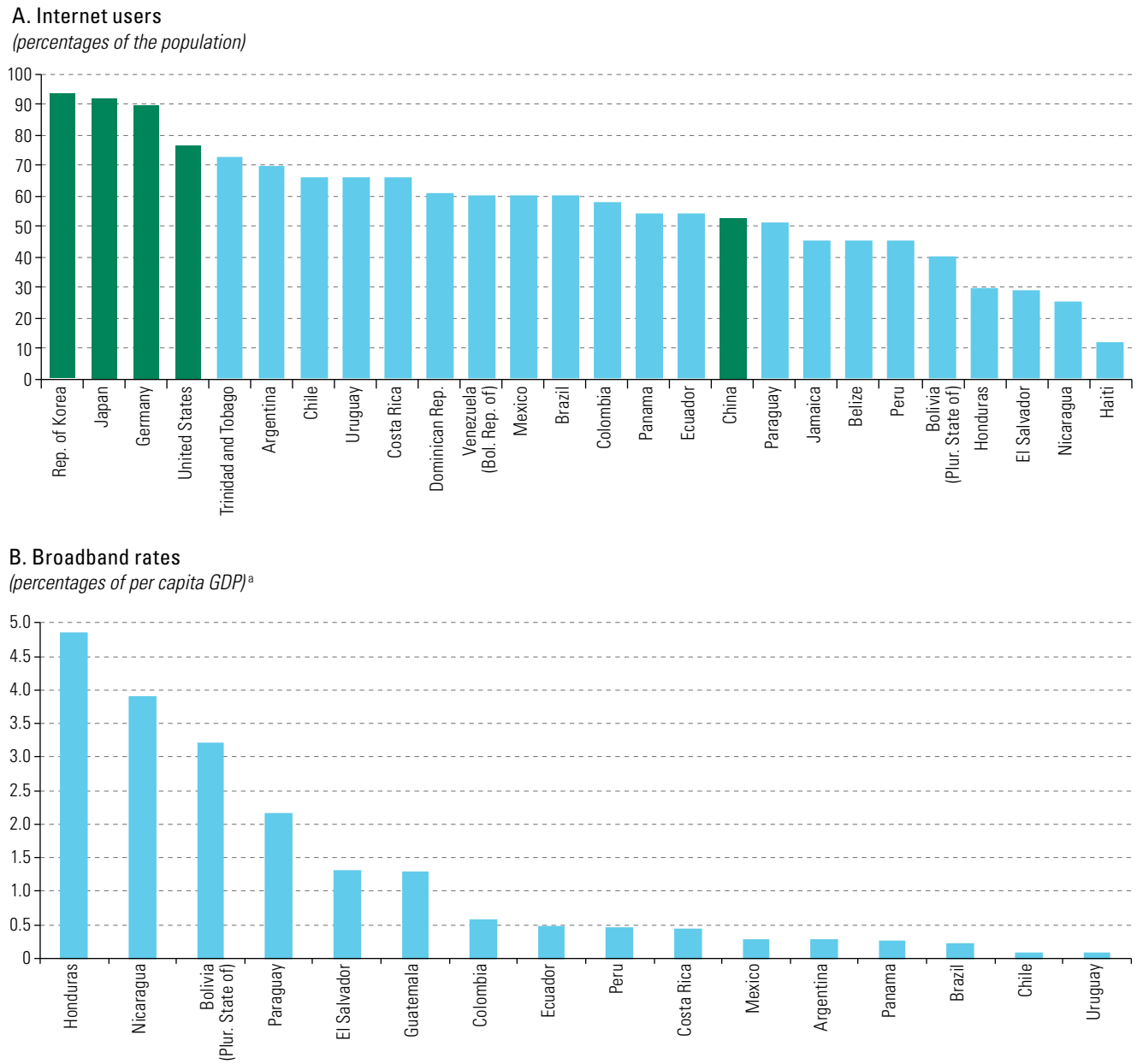
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of "Do people use Internet for personal purpose?", Consumer Barometer with Google, 2017 [online] https://www.consumerbarometer.com/en/.

2. Digital ecosystem development varies between countries

The dynamics of e-commerce in the region depends above all on the development of the countries' digital ecosystems. These include infrastructure, connectivity, digitalization of households and businesses, competition, the development of digital industries, human capital and other factors of production, along with the institutional and regulatory framework (CAF, 2017).

A crucial first pillar of this ecosystem is consumers' access to the Internet. Although Internet penetration in the region has improved greatly in recent years, sharp inequalities persist: in some countries, more than 60% of the population accesses the Internet, while in others, the rate is only around 20% (see figure III.18A). Internet use is not only a matter of access, however, but also depends on the cost of broadband, which differs widely between countries (see figure III.18B).

Figure III.18
Latin America and the Caribbean and selected countries: Internet access and cost indicators, 2016

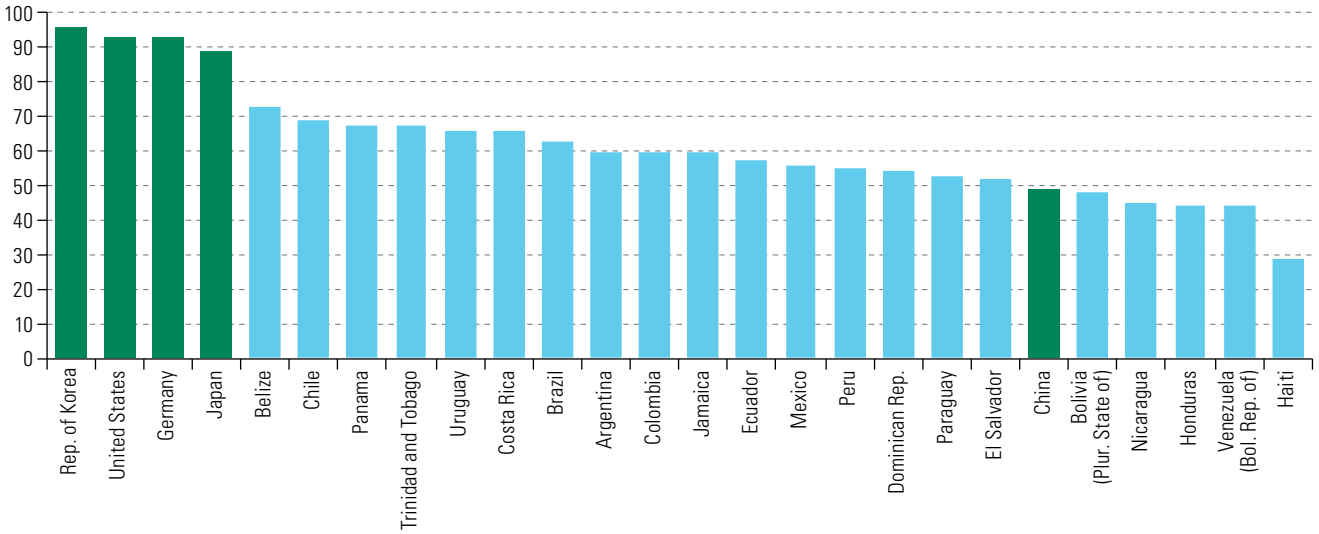


Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations Conference on Trade and Development (UNCTAD), "UNCTAD B2C eCommerce Index 2017", *UNCTAD Technical Notes on ICT for Development*, No. 9, Geneva, 2017; and data from the Regional Broadband Observatory.
[a] Per capita GDP figures are monthly and refer to 2016, whereas broadband rates are 2017 figures.

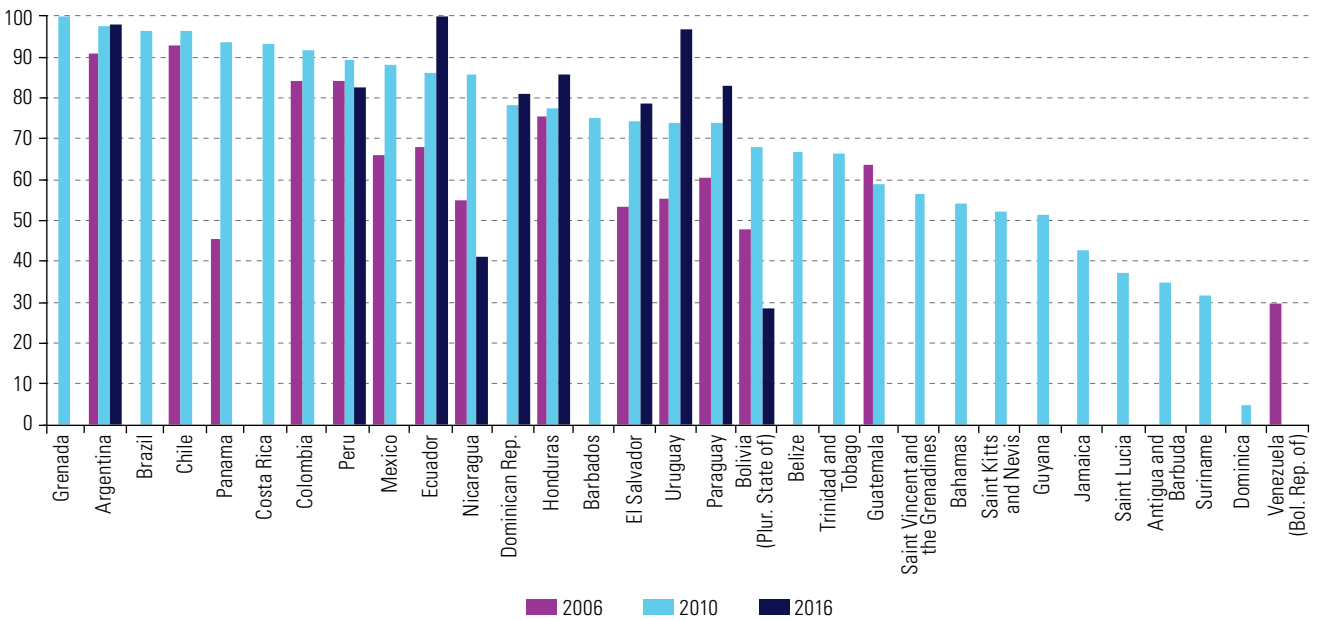
A second pillar of e-commerce is digitalization among firms. The ability of firms to trade securely depends partly on the availability of secure Internet servers that encrypt online transactions to protect the data transfer from any unauthorized interception. The countries of the region differ substantially in the number of secure servers they have per million inhabitants (see figure III.19A). Firms also need to have a well-managed website. According to 2016 data from the World Bank Enterprise Surveys, in a small group of countries (such as Argentina, Brazil, Chile and Granada) nearly all manufactoring export firms have a website, while in other countries less than half of such firms do so. Nonetheless, the partial data for 2016 show a significant increase in the proportion of export firms with a website, except for those of Nicaragua and the Plurinational State of Bolivia (see figure III.19B).

Figure III.19
Latin America and the Caribbean and selected countries: indicators of production digitalization

A. Secure Internet servers, 2016
(number per million inhabitants)



B. Manufacturing firms that export and have a website, 2006–2016
(percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations Conference on Trade and Development (UNCTAD), "UNCTAD B2C eCommerce Index 2017", *UNCTAD Technical Notes on ICT for Development*, No. 9, Geneva, 2017; World Bank, "Enterprise Surveys" [online] http://www.enterprisesurveys.org; Economic Commission for Latin America and the Caribbean (ECLAC), *Data, algorithms and policies: redefining the digital world* (LC/CMSI.6/4), Santiago, 2018.

It is essential for firms to have workers who are properly trained for digitalization. This type of human capital is needed both to promote new digital industries and for the transformation of traditional firms. A review of human capital formation programmes associated with digitalization in seven of the region's countries (Argentina, Brazil, Chile, Colombia, Mexico, Peru and Uruguay) identified major demand and supply challenges (Katz, 2018). Some countries offer insufficient training in mature digital technologies. In others, the supply of programmes is adequate, but these are underutilized (although in

Chile, Colombia and Uruguay this trend is being reversed). On the supply side, there are relatively few degree programmes in advanced technologies or postgraduate courses in digital technologies.

Lastly, the digital conversion of firms and its impact on employment is also a challenge. For a non-digital firm to enter e-commerce, there are two possible scenarios: either it hires new trained personnel, which will increase its costs, or it trains its existing staff, which means a full reorganization of the firm.[8]

3. National regulations are heterogeneous

Various countries of the region have started to regulate cross-border e-commerce to a greater or lesser degree. These regulations impose specific disciplines to achieve different objectives, such as promoting the digitalization of the economy and international trade, improving confidence in international digital transactions and reducing obstacles to such trade.

In their legislations, the region's countries are choosing to follow different international regulatory models, of which the examples of the United States, the European Union and China are reviewed below. The first two hold similar views on the organization of e-commerce, except for the freedom of data flows and privacy, where they have adopted opposite positions. China has a system in which the State's regulatory role and control is greater. Below, the progress made in the region's three leading e-commerce markets, Argentina, Brazil and Mexico, is discussed.

The United States advocates fully open cross-border e-commerce, partly because its firms dominate the digital economy and e-commerce (Ciuriak and Ptashkina, 2018). This explains why it was the first country to include clauses in its trade agreements on the free flow of information and the elimination of different barriers to e-commerce. The United States takes the view that private data belong to those who collect them (Aaronson, 2016).

The European Union does not have the pressure of the American digital giants to deal with, which partly explains why it has become the main driving force behind e-commerce regulation. To this end, it agreed with the United States on 10 principles, including network access, free flow of data across borders, no requirement to have local infrastructure to be able to operate digitally, and commitment of governments to authorize competition in telecommunications (Ciuriak and Ptashkina, 2018). On the other hand, in May 2018 the new General Data Protection Regulation (GDPR) came into force as one of the most demanding and rigorous standards in the world, having taken four years to be developed. It represents the most comprehensive update of European privacy laws in more than 20 years. This, in conjunction with the population and economic weight of the European Union, has quickly made the regulation a global benchmark on personal data protection and the rights of online users. The Regulation will make fundamental changes to the way in which the Internet has been functioning and operating, increasing the costs of collecting and using data, by ensuring greater protection of consumers' private data. The European Union considers that private data belong to the individual. This rule could have global repercussions if other countries decide to replicate the regulations in their territories.

Lastly, China does not share the commitment to open digital borders and instead claims sovereignty over its cyberspace. This was expressed in the Cybersecurity Act, was adopted in June 2017, with three important characteristics: (1) physical information must be stored in mainland China; (2) electronic equipment must be inspected before being installed in the country; and (3) laws that reinforce the regulation and retention of information (Ciuriak and Ptashkina, 2018).

[8] Statement by Raúl Katz at the Sixth Ministerial Conference on the Information Society in Latin America and the Caribbean, held in Cartagena de Indias (Colombia), held on 18–20 April 2018.

Argentina has no specific laws on e-commerce. It is governed by general civil and commercial legislation that was not designed for the specific features of online transactions, which generates legal uncertainty (Tucci, 2017). This affects both the providers of services over the Internet and the relationship between them and the users or owners of the rights in question. The question of when the intermediary (the Internet platform) is responsible for transactions between an external provider and a user is not clearly defined in this country. This lack of clarity produces a sense of insecurity that also affects consumers, who are suspicious when supplying credit card data to a website that they do not know personally. The new Civil and Commercial Code of the Nation, which has been in effect since mid-2015, makes specific mention of electronic contracting, with rules on computer evidence, electronic document and digital signature. Nonetheless, it does not provide a comprehensive legal security framework, and the specifics of cross-border e-commerce remain unaddressed (Neuman, 2016).

In Brazil, a specific regulation has been put in place for different aspects of e-commerce (Aaronson, 2016; Fortanier and López, 2017). First, the country has a Civil Framework for the Internet, in force since mid-2016, which regulates Internet neutrality by preventing firms from limiting or blocking data traffic to third parties. Similarly, in order to improve the protection of personal data, services such as WhatsApp are now required to have legal offices in the country to respond to the demands of Brazilian regulators (OBSERVACOM, 2016). At the same time, issues related to Internet neutrality and the storage of personal data have been brought under the purview of the National Telecommunications Agency, the National Consumer Secretariat of the Ministry of Justice and the Administrative Council for Economic Defence (CADE), according to their respective jurisdictions. Brazil has also regulated a number of electronic transport applications, such as Uber, Cabify, 99 and Lady Driver, which set a precedent for the region and the world at large. The law aims to define parameters of legality to enable these firms to operate, setting clear criteria for services of this type. Drivers hired through digital platforms must pay taxes and have a special and secure license to transport passengers, with other requirements to be regulated and supervised by municipal governments (López, 2018).

In Mexico, the Tax Administration Service (SAT) has been working since late 2016 on a regulation for cross-border e-commerce with the aim of combating the shipment of counterfeit merchandise, the falsification of invoices and tax evasion, among other irregular practices. According to the SAT, packages arriving at the Mexican customs can follow two paths, depending on whether the transaction is declared as less than or greater than US$ 50. If the amount exceeds this *de minimis* level, taxes must be paid. The problem arises with transactions that are underinvoiced or merchandise that is declared for less than its true value. The Mexican authorities estimate that 65% of products entering the country by courier or parcel do not pay taxes because a commercial value of less than US$ 50 is declared (Deloitte, 2017). The initiative to introduce a new regulation received support from the National Association of Self-service and Department Stores (ANTAD), which considers that cross-border e-commerce generates unfair competition in the country, since it does not pay taxes or have to satisfy the same regulations (Sánchez Onofre, 2017). With the proposed new legislation, the General Customs Administration seeks to improve information on cross-border e-commerce, avoiding undervaluation or under-invoicing. The import threshold of US$ 50 will be maintained, but controls will be tightened in order to detect the traceability of the goods and when they should pay taxes (Saldaña, 2017).

Regulations on cross-border e-commerce vary greatly across the region. According to the Digital Trade Restrictiveness Index (DTRI) of the European Centre for International Political Economy (ECIPE), Argentina and Brazil have relatively stricter regulations on cross-border e-commerce (both countries apply relatively high tariffs). Brazil has the most discriminatory tax regime of the 64 countries that make up the aforementioned index, since it sets out to tax imported digital goods and services by more than those

produced domestically; Argentina applies the largest number of restrictions on imports of digital goods and services (see box III.1). Some of these restrictions on (cross-border) digital commerce may be justified to achieve specific public or private policy objectives (for example, to collect taxes or boost domestic e-commerce).

Box III.1
Restrictions on cross-border e-commerce

The Digital Trade Restrictiveness Index (DTRI) measures the degree of restriction imposed by four groups of regulations in 64 countries. It assigns each country's regulations a score ranging from 0 (slightly restrictive) to 1 (highly restrictive), depending on the degree to which the regulations discriminate against foreign or digital firms. These indices are kept in a database published by the European Centre for International Political Economy (ECIPE), covering 10 countries in the region (Argentina, Brazil, Chile, Colombia, Costa Rica, Ecuador, Mexico, Panama, Paraguay and Peru).

Argentina and Brazil maintain relatively strong tax restrictions (see figure B). Both countries apply most favoured nation (MFN) tariffs to digital goods averaging 12.7% and 13.2%, respectively, with maximum rates of up to 35% for certain goods; and they have implemented trade defence measures for certain digital products. Brazil also has the most discriminatory tax regime of the 64 countries, aimed at taxing imported digital goods and services more heavily than those produced in the country. Argentina is the third most restrictive country, with several taxes specific to imported mobile devices.

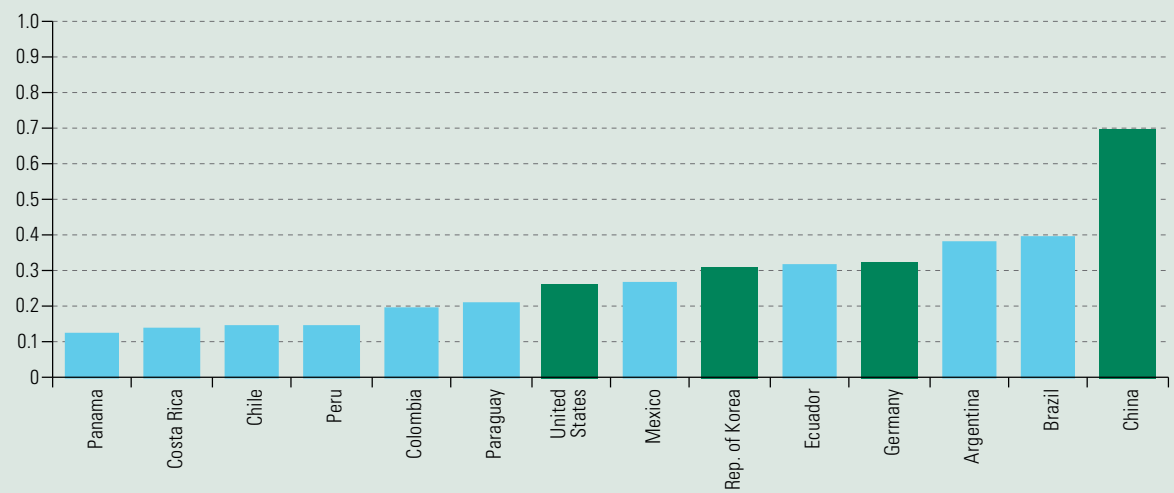
Establishment restrictions are light in the region (see figure C). China is the most restrictive country in terms of intellectual property, followed a long way behind by Ecuador, Brazil and Colombia, in that order. Argentina, Ecuador and Peru also apply certain restrictions on the patent application process, including high registration fees for foreign firms and the requirement to work through a local agent. Colombia and Mexico apply certain restrictions on competition in telecommunications. The free temporary circulation of natural persons between countries to provide digital services is somewhat restricted in Brazil, Panama and Peru.

Data regulations do not restrict trade to any significant degree in the region, unlike what happens in China and, to a lesser extent, in Germany (taken as representative of the European Union) (see figure D). Colombia and Costa Rica recently amended their laws on data protection, to adapt them to the needs of transnational firms operating in their territories. In most of the region's countries, intermediary digital platforms are protected from responsibility for all of their users' actions, provided that they respect certain conditions.

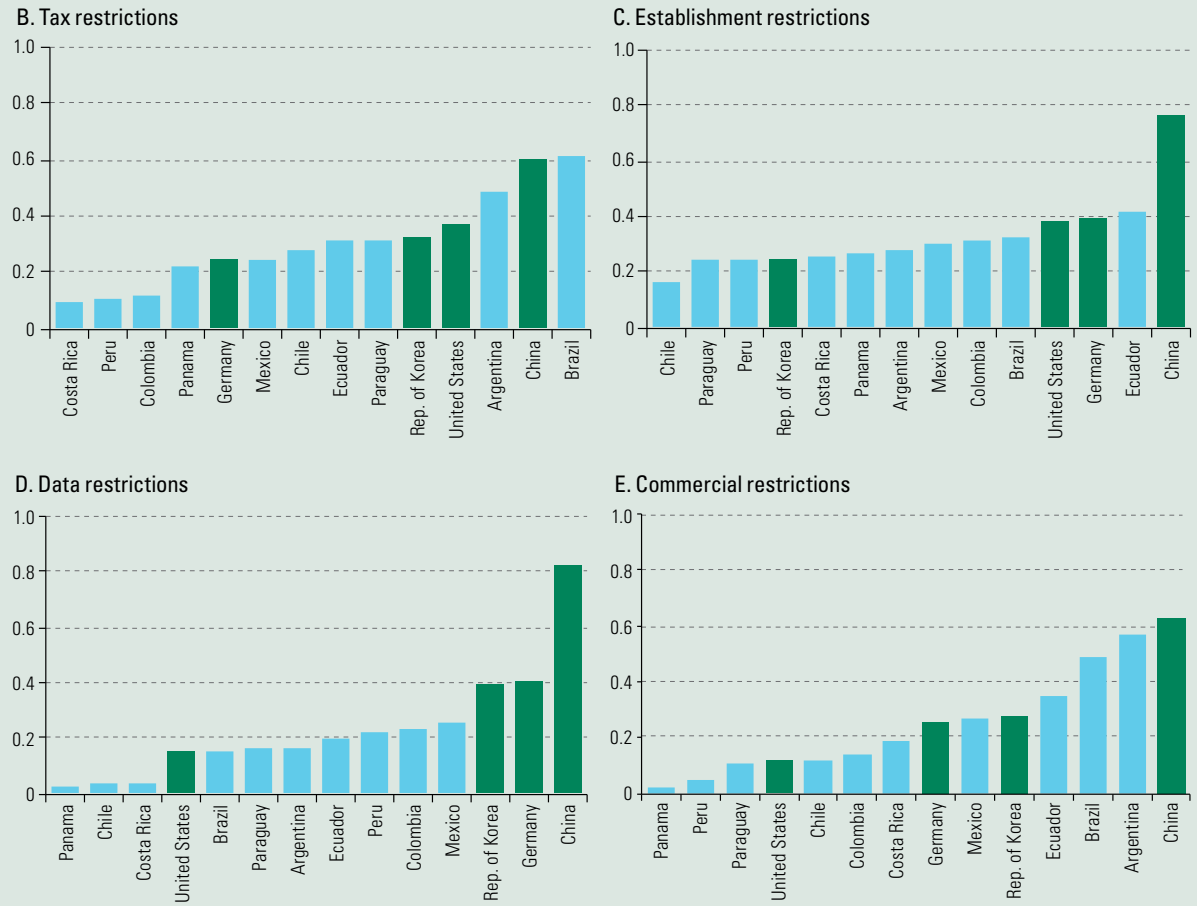
Argentina and Brazil are the countries that apply the greatest relative restrictions on imports of digital goods and services (see figure E). Argentina applies specific restrictions, taxes and licences on the importation of information technology goods. Brazil bans the importation of used consumer goods, including ICT products. There are also other restrictions, such as local content requirements in the case of the domestic production of telephones, televisions, electronic products and household appliances. To register an Internet domain, some countries require citizenship or an establishment (Argentina), or else a local representative (Brazil, Chile and Paraguay).

Selected countries: levels of restriction on cross-border e-commerce, 2017
(Index from 0 to 1=from least to greatest restriction)

A. Global restriction index



Box III.1 (concluded)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of M.F. Ferracane, H. Lee-Makiyama and E. van der Marel, *Digital Trade Restrictiveness Index*, Brussels, European Centre for International Political Economy (ECIPE), 2018.

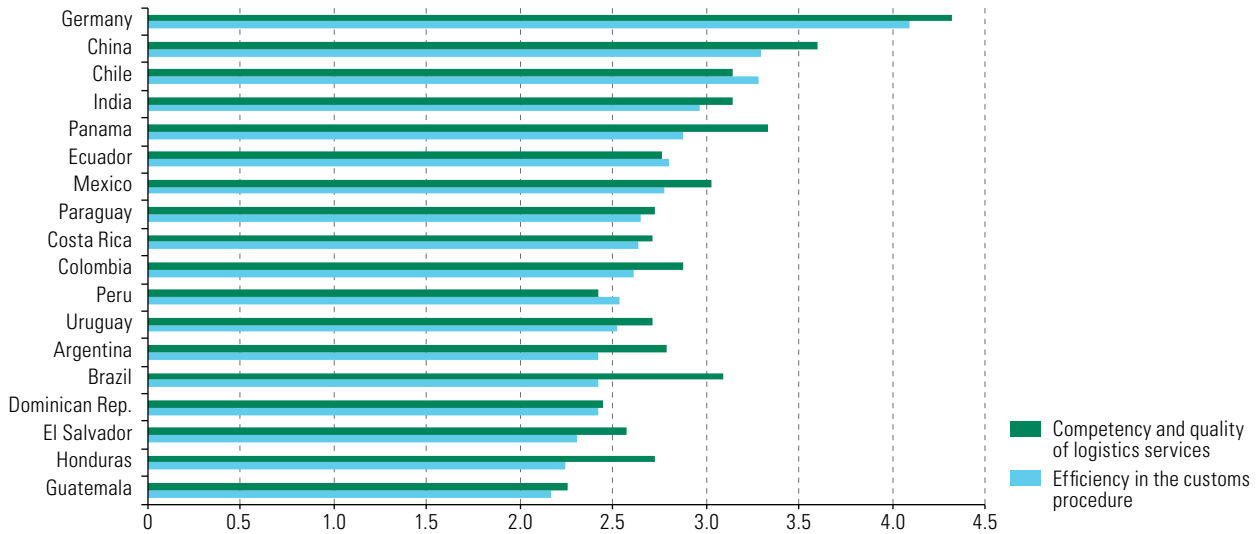
Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of M.F. Ferracane, H. Lee-Makiyama and E. van der Marel, *Digital Trade Restrictiveness Index*, Brussels, European Centre for International Political Economy (ECIPE), 2018.

4. Inefficiencies in logistics, customs and postal services

A large obstacle facing cross-border e-commerce consists of the costs and timeframes associated with logistics, customs and courier services. Firms that answered the survey conducted by Nextrade Group rated this as the second most important obstacle. It is because of this that many small businesses in several of the region's countries are reluctant to participate in cross-border e-commerce. This is also one of the five main obstacles faced by firms that are already exporting digitally.

Despite some improvements in recent years, the performance of logistics and customs procedures in the region is still among the most difficult challenges for firms involved in cross-border e-commerce and in value chains generally. The region lags far behind countries such as Germany, China and India (see figure III.20). According to the Universal Postal Union (UPU), sending intraregional packages in Latin America takes twice as long as similar shipments between advanced economies (see UNCTAD, 2016a).

Figure III.20
Selected countries: logistics performance indicators, 2018
(Index from 1 (worst) to 5 (best))



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Bank, Logistics Performance Index 2018.

(a) Challenges and progress in the region's customs

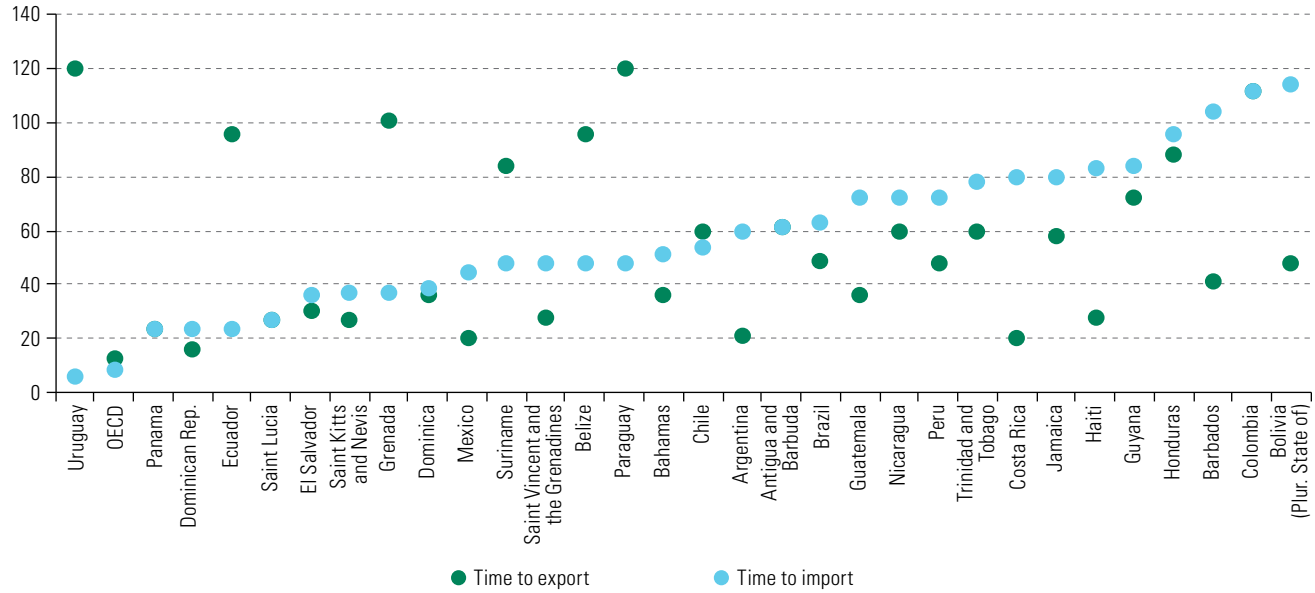
In the vast majority of customs services in Latin America and the Caribbean, timeframes are longer and costs higher than in the high-income OECD countries for general merchandise imports and exports.[9] The data for Latin America and the Caribbean reflect infrastructure deficiencies, the complexity of customs regulations and the lack of staff training. Fulfilling border procedures for the import of a container took an average of 65 hours and cost US$ 681 in 2016, compared to an average of nine hours and US$ 111 in OECD countries (World Bank, 2018) (see figure III.21). Reducing these times and costs would be essential for promoting trade in the region, which would also favour e-commerce.

In cross-border B2C e-commerce, products are delivered by the postal service or express courier firms. The first is slower and cheaper, while the second is quicker but more expensive. The regulations applicable to each modality are different. In general, the postal service regime is more flexible and is underpinned by an international treaty that standardizes and unifies certain criteria and parameters to be followed. In contrast, the rules applicable to express courier firms are not governed by any international guideline or agreement, so each country sets its own regulations. Similarly, the procedures, deadlines and information requirements for customs clearance differ from one country to another across the region. Some offer simplified import procedures for this type of operation, whereby express courier firms or postal services are authorized to pay customs duties and taxes on a consolidated basis, or else speedier clearance is foreseen for these shipments.

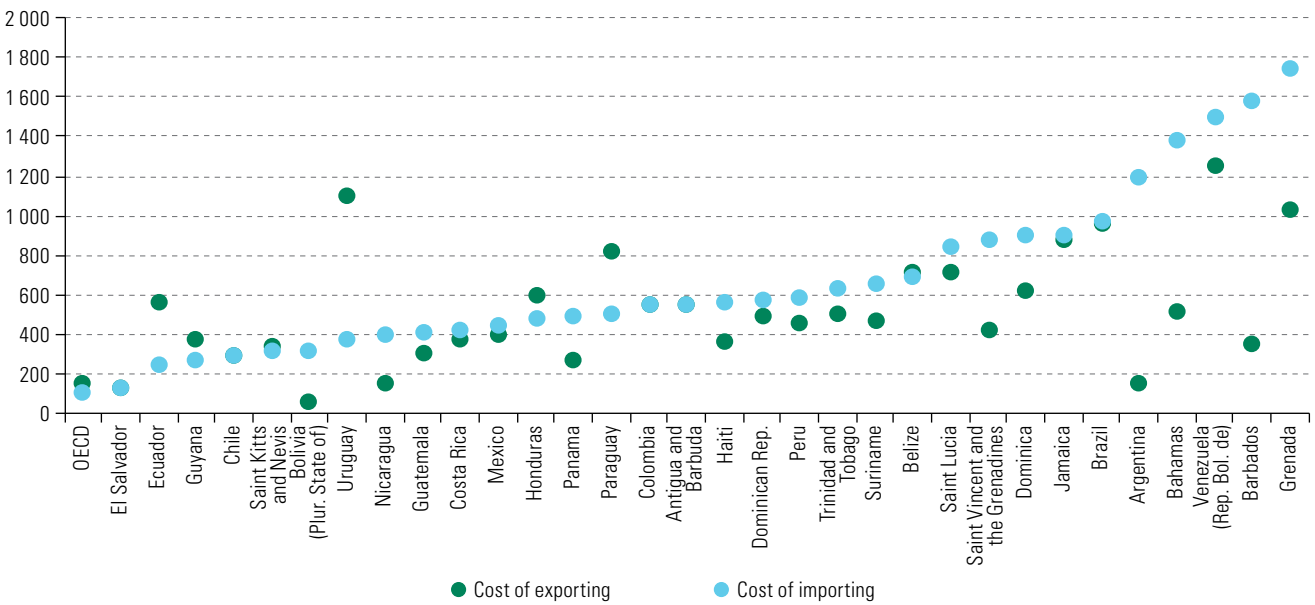
9 There are no international statistics on the specific times taken to export and import and the costs of e-commerce shipments.

Figure III.21
Latin America and the Caribbean and Organization for Economic Cooperation and Development (OECD): times and costs involved in exporting and importing, 2016

A. Times taken to export and import
(hours)



B. Costs of exporting and importing
(dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of World Bank, *Doing Business 2018: Comparing Business Regulation for Domestic Firms in 190 Economies*, Washington, D.C., 2018.

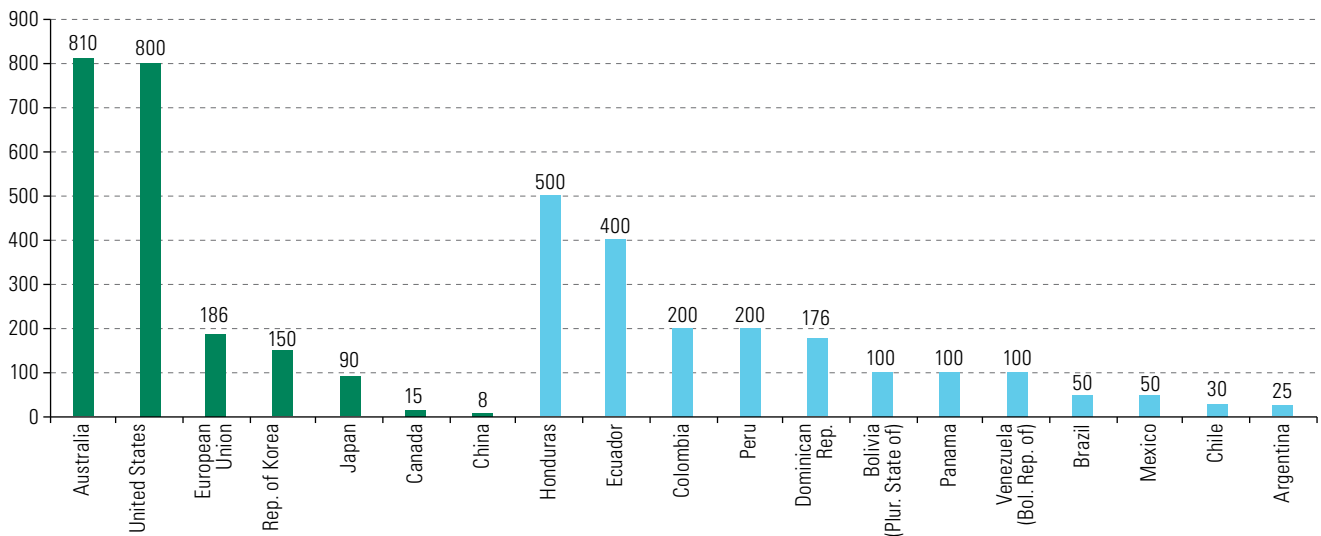
Note: A country's import timeframes and costs were estimated for the transfer of a 15-ton container of autoparts from the largest city of the country's main trading partner to its own largest city. In the case of exports, a country's timeframes and costs represent the transfer of a shipment of the main product sold abroad from the country's main city to the main city of the destination market. Figure A excludes the Bolivarian Republic of Venezuela, where timeframes for exporting and importing were 288 and 240 hours, respectively.

The customs regimes currently in force were conceived and designed in accordance with traditional trade patterns and have evolved little to meet the challenges posed by cross-border e-commerce. Solving this problem will require fundamental changes and regulatory development, both nationally and internationally. The World Trade Organization (WTO) and the World Customs Organization (WCO) have been leaders in promoting changes in this area. Since the early years of the 2000 decade, and especially during the last five years, the latter has been implementing a work programme on cross-border e-commerce.

In 2016, WCO set up a working group on e-commerce involving representatives of customs administrations, tax authorities, international organizations, postal operators, express courier firms, online payment-service providers, e-commerce platforms, the private sector and academia. In June 2018, it published the Cross-Border E-Commerce Framework of Standards.[10] These standards will serve as a useful tool for the establishment of norms and procedures that reflect the current trade context, in which e-commerce has an increasingly important role to play.

An element to consider for reducing delivery times and the costs associated with cross-border e-commerce of physical goods sold to consumers is the *de minimis* value. This refers to a threshold value or weight, below which the traded goods are exempt from duties, taxes and certain customs controls. This *de minimis* regime is particularly important for cross-border B2C and C2C e-commerce, given that most of the shipments in question are of low value. This instrument is an example of a good principle under the WCO Revised Kyoto Convention to promote e-commerce. These thresholds vary widely across the region's countries (see figure III.22); and the amounts in question have either remained constant in recent years, or else have been reduced or even eliminated.

Figure III.22
Selected countries: *de minimis* thresholds for postal items, 2018
(Dollars)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Global Express Association (GEA), "Overview of *de minimis* value regimes open to express shipments world wide", Geneva, March 2018 [online] https://global-express.org/assets/files/Customs%20Committee/de-minimis/GEA%20overview%20on%20de%20minimis_28%20March%202018.pdf.

[10] See World Customs Organization (WCO), "Cross-Border E-Commerce Framework of Standards", Brussels, June 2018 [online] http://www.wcoomd.org/-/media/wco/public/global/pdf/topics/facilitation/activities-and-programmes/ecommerce/wco-framework-of-standards-on-crossborder-ecommerce_en.pdf?db=web.

Internationally, the need to raise the *de minimis* levels and foster convergence between the different countries has started to gain traction, in order to promote cross-border e-commerce. Nonetheless, this is a sensitive tool for domestic trade in which various factors are in play. Although there is still no multilateral or plurilateral agreement on the issue, several agencies and treaties are urging countries to negotiate an accord on the subject. For example, in its Agreement on Trade Facilitation, WTO members committed to defining a *de minimis* value. The International Chamber of Commerce (2015) suggests a *de minimis* value of US$ 1,000 (higher than currently prevailing in any country) and recommends establishing a global reference value of at least US$ 200.

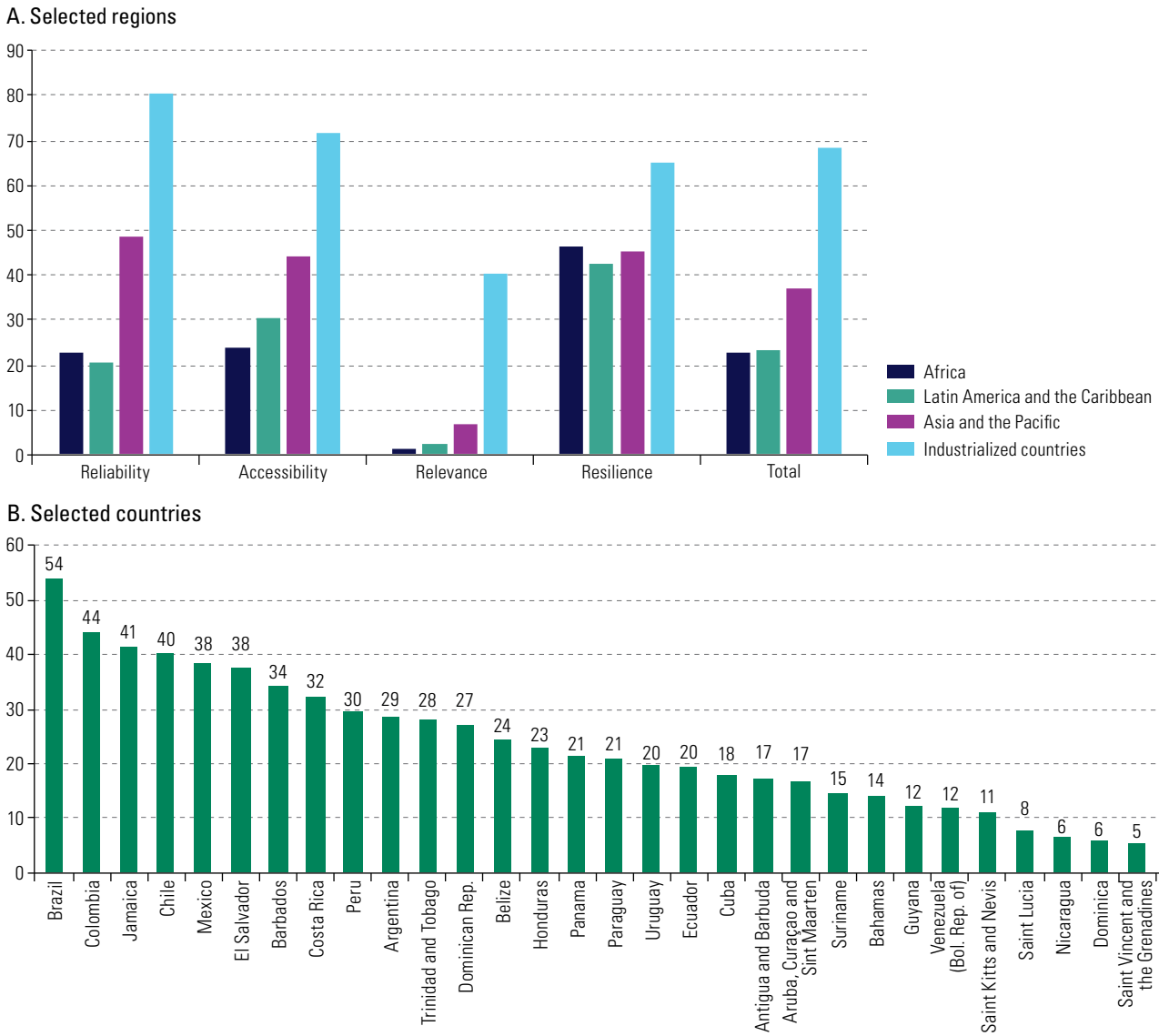
Cross-border e-commerce is also benefiting from implementation of the commitments made by WTO members in the Trade Facilitation Agreement, which includes provisions to further expedite the movement, release and clearance of goods, including goods in transit. The Agreement entered into force in February 2017 and has already been ratified by 102 countries. One issue of particular benefit for e-commerce is the promotion of paperless trade, based on electronic communications, including the exchange of data and documents in digital format.

(b) New challenges for postal services

In the case of cross-border e-commerce involving physical goods sold to consumers, the final (and fundamental) link in the logistics chain is the delivery of orders through postal services. The postal services of the countries in question distribute the majority of global B2C e-commerce. The Universal Postal Union (UPU) maintains a ranking of 173 countries that considers reliability (operational efficiency and service quality), accessibility (postal internationalization), relevance (competitiveness in mail, logistics and financial services) and resilience (innovation and adaptability of the business model to the international reality). In 2018, the three top-ranked postal services were those of Switzerland, the Netherlands and Japan. Meanwhile, the postal performance of Latin America and the Caribbean was slightly better than that of Africa, but worse than that of Asia and the Pacific, and much worse than that of the developed countries (see figure III.23A).

With the exception of Brazil, no mail service in the region achieves a medium-high rating (over 50 points). Of the other countries, 11 were classified medium-low (between 25 and 50 points) and the remaining 19 were rated low (less than 25 points) (see figure III.23B). These inefficiencies cause delays, even in domestic e-commerce. For example, the Argentine Chamber of Electronic Commerce found that domestic e-commerce deliveries generally took at least a week (Rodríguez, 2017). Delivery and administrative costs are inflated in Brazil by the state governments' tax collection procedures, although the introduction of a national value added tax (VAT) system was proposed in August 2017 to mitigate the impact, by eliminating multiple state level taxes.

Figure III.23
Selected countries and regions: postal service development, 2018
(Index from 0 (lowest) to 100 (highest))



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of Universal Postal Union (UPU), *Postal Development Report 2018: Benchmarking a Critical Infrastructure for Sustainable Development*, Bern, 2018.

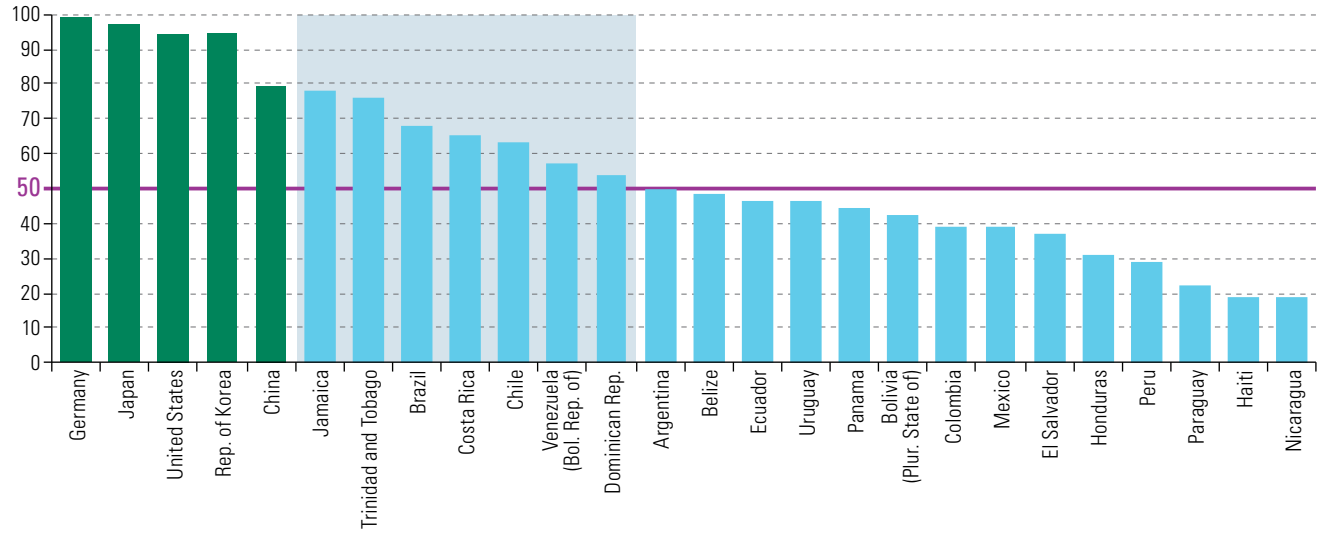
5. International payment systems need further development

Another major barrier arises when making cross-border payments to buy goods or services. A survey shows that two thirds of online cross-border purchases in the region are aborted at the payment stage, probably owing to the complexity of payment options (Allpago, 2018). While online payments have become simpler in Latin America and the Caribbean, thanks to the proliferation of credit and debit cards and private platforms, low-cost and efficient cross-border payments remain a double-edged challenge.

One of the challenges for cross-border payments is the relative lack of financialization of the region's population. In a sample of 21 countries, in only seven

did more than half of individuals over 15 years of age have access to a bank account in 2014 (see figure III.24). The card penetration rate was even lower: just six out of 18 countries reported more than 30% of persons aged over 15 with access to a debit card (ECLAC, 2018a).

Figure III.24
Selected countries: persons over 15 years old with a bank account, 2014
(Percentages of the total population aged over 15 years)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of United Nations Conference on Trade and Development (UNCTAD), "In search of cross-border e-commerce trade data", *UNCTAD Technical Notes on ICT for Development*, No. 6, Geneva, 2016; "UNCTAD B2C eCommerce Index 2017", *UNCTAD Technical Notes on ICT for Development*, No. 9, Geneva, 2017.

Secondly, for buyers and firms that do have access to international cards and other payment instruments, in some countries the fees charged on cross-border transactions can undermine the benefits of the purchase, because firms in the region tend to use United States dollars to carry out intraregional transactions. This also leads countries such as Brazil to levy an automatic 6.38% tax on international purchases with credit cards (PagBrazil, 2017). Moreover, each transaction requires documentation in foreign currency, for which the fixed cost is also high. This type of measure acts as a disincentive for many low-value purchases, by making them proportionally more expensive than higher-value ones. Countries have made little progress on this, and more coordination is needed at the regional level.

New non-bank actors and digital financial technology firms that offer international payment services are emerging for cross-border e-commerce, such as Apple (Apple Pay), Google (Google Pay) or Samsung (Samsung Pay). Some firms, such as Transferwise, offer cross-border person-to-person (P2P) money transfer systems (ECLAC, 2018a).

D. Initiatives for cross-border e-commerce

This section provides an overview of global, regional and national policies to boost cross-border e-commerce, firstly reviewing initiatives to improve its regulation, by analysing the different regulatory approaches used by the main international actors and progress made in the region's integration schemes and free trade agreements. The section then highlights examples of cross-border e-commerce promotion policies implemented in a number of Latin American and Caribbean countries; and it concludes with a survey of e-commerce facilitation initiatives.

1. Fostering the digital ecosystem

The development of e-commerce depends directly on the breadth and strength of the digital ecosystem. The number of vendors using online platforms is closely related to countries' broadband connectivity, the availability of ICTs, technical skills and the quality of international logistics (Suominen, 2018). Accordingly, there is a need to promote the development of this ecosystem, involving the various components required to make the most of the benefits offered by the Internet. Similarly, in order to enhance e-commerce in the international arena, the digital ecosystem needs to be able to transcend borders and interconnect countries. Policies to enhance Internet access and connectivity between countries thus also facilitate cross-border e-commerce. Hence the importance of initiatives such as the Digital Agenda for Latin America and the Caribbean (eLAC2020), which, although targeting the digital ecosystem as a whole, are also indispensable for the development of e-commerce (see box III.2).

Box III.2
The Digital Agenda for Latin America and the Caribbean (eLAC2020)

With technical support from ECLAC, since 2005 the countries of Latin America and the Caribbean have been developing action plans to reduce the digital divide and promote access to and use of ICTs as tools of development. In 2005, the first Action Plan on the Information Society in Latin America and the Caribbean (eLAC2007) was created, followed by updates in 2008 (eLAC2010) and 2010 (eLAC2015). The Fifth Ministerial Conference on the Information Society of Latin America and the Caribbean, held in Mexico City in 2015, approved the Digital Agenda (eLAC2018), which promotes a process of political dialogue aimed at agreeing on a regional digital strategy with goals to be met by 2018.

The Sixth Ministerial Conference, held in Cartagena de Indias (Colombia) in April 2018, was attended by 23 of the region's countries and approved the eLAC 2020 Agenda. This Agenda aims to coordinate the digital cooperation efforts on 30 objectives embedded in seven areas of action: (1) digital infrastructure; (2) digital transformation and digital economy; (3) regional digital market; (4) digital government; (5) digital culture, skills and inclusion; (6) emerging technologies for sustainable development, and (7) governance for the information society.

With regard to point 3 (regional digital market), the countries of Latin America and the Caribbean have improved the use of and access to telecommunications services. They are currently above the world average and are steadily closing the gap with developed countries. Nonetheless, there is still a long way to go, especially in addressing the heterogeneous quality of access that exists between countries. Moreover, the development of the Internet of Things in the region requires multihoming to be possible (in other words, maintaining a permanent connection with more than one network simultaneously), as well as load balancing. Increasing Internet use and access, including application of the Internet of Things, generates an increase in spectrum use, in both the licensed and the unlicensed frequency bands. This calls for a regionally coordinated update to legislation, both for its regulation and to determine what each frequency band will be used for.

The eLAC 2020 Agenda pursues regional coordination of national policies and strategies, without which it will be impossible to create a regional digital market. The countries of Latin America and the Caribbean have made progress in areas such as infrastructure development, Internet penetration and spectrum regulation; but these specific advances do not necessarily contribute to fluid digital traffic between one country and another. Efforts such as those made through eLAC are helping the region to avoid missing the opportunity to interconnect digitally, integrate national markets, increase demand and encourage digital innovation.

Source: Economic Commission for Latin America and the Caribbean (ECLAC), "Digital Agenda for Latin America and the Caribbean (eLAC2020)", Santiago 2018 [online] https://conferenciaelac.cepal.org/6/sites/elac2020/files/cmsi.6_digital_agenda-en-23_april.pdf; "Mercado digital regional: aspectos estratégicos", *Project Documents* (LC/TS.2018/30), Santiago, 2018.

2. Multilateral and subregional progress on regulation

This subsection now reviews WTO multilateral initiatives and progress made in integration schemes and selected free trade agreements.

(a) The multilateral framework presents incipient advances

The rapid expansion of cross-border e-commerce has triggered a vigorous debate on its multilateral regulation. Firstly, as the phenomenon itself is not clearly defined, nor are the boundaries of what is to be regulated. There are also discussions about particular cases where it is unclear if what is being traded is a good or a service, which determines whether its regulation falls under the rules of the General Agreement on Tariffs and Trade (GATT) or the General Agreement on Trade in Services (GATS) (Fleuter, 2016). This discrepancy has practical consequences, since the former (GATT) affords greater liberalization.

To resolve differences of this type, multilateral initiatives for the regulation of cross-border e-commerce have been proposed. The difficulties faced by WTO in addressing this mode of trade stem partly from the fact that it was virtually non-existent in the mid-1990s when the organization was created and its key agreements were negotiated. Although GATS maintains that its regulations are technologically neutral, in other words they are applied independently of the channel through which the service is traded, for that very reason they do not address any of the specific features of e-commerce.

In 1998, it was decided to bring cross-border e-commerce within the WTO remit, and a work programme was set up to consider the different facets of the phenomenon. A moratorium was also called, in which member States agreed not to impose customs duties on electronic deliveries. This moratorium has been renewed continuously since its creation, but it is not yet permanent. Moreover, after two decades, the work programme has not progressed towards the definition of specific standards.

The Eleventh WTO Ministerial Conference, held in Buenos Aires in December 2017, issued the Joint Statement on E-commerce, in which 71 members agreed to start "exploratory work together toward future WTO negotiations on trade-related aspects of e-commerce".[11] The initiative was added to the WTO Work Programme on E-commerce, and participation was left open to the other members of the organization. In the first few months of 2018, nine proposals were submitted from 10 countries (including four Latin American ones), linked to the Joint Statement. The presentations focused on the areas of market access (in particular, transforming the moratorium into a permanent standard), trade facilitation (with special emphasis on infrastructure), consumer protection and data flow (through the interoperability of regulatory frameworks, digitization of documents and digital authentication) (ICTSD, 2018a).

In the absence of a multilateral framework, nearly half of WTO members have made progress in regulating e-commerce through regional or bilateral agreements (ICTSD, 2018b). Nonetheless, several countries in Latin America and the Caribbean (Argentina, the Bolivarian Republic of Venezuela, Brazil, Cuba, Ecuador, Paraguay and the Plurinational State of Bolivia) still do not even have a treaty that contains provisions on e-commerce (Wu, 2017).

[11] See World Trade Organization (WTO), "Joint Statement on Electronic Commerce", Buenos Aires, December 2017 [online] https://www.wto.org/english/thewto_e/minist_e/mc11_e/documents_e.htm.

(b) The subregions are not meeting the challenge

Several countries of Latin America and the Caribbean have started to address this issue, mainly through their subregional integration schemes, but also through provisions contained in their preferential trade agreements (Giordano, 2017).

The four countries that comprise the Pacific Alliance have adopted a large number of provisions on e-commerce (Giordano, 2017); and a specific chapter on this type of trade is included in the Additional Protocol to the Pacific Alliance Framework Agreement. This makes an initial attempt to define the area of application and its relevance, to then spell out the parties' commitment to facilitating e-commerce and to reducing unnecessary barriers to it. There are also several specific clauses, of which the four listed below are binding.

(i) Article 13.4 provides that no customs duties, fees or charges may be applied to trade in digital products through electronic media. This makes the WTO moratorium permanent.

(ii) Article 13.4bis prohibits the parties from granting less favourable treatment to the digital products of a third party, than it grants to other similar digital products.

(iii) Article 13.10 deals with authentication and digital certificates, and states that the parties involved in an electronic transaction are guaranteed the right to prove, before the courts, that the transaction complies with the authentication requirements specified in its legislation.

(iv) Article 13.11bis prohibits requiring computer facilities to be used or located in the territory of a country as a condition for operating therein. It also provides that countries will standardize authentication and certificate mechanisms.

Chapter 13 also includes six programmatic articles in which the parties are urged to work on transparency, consumer protection, paperless trade, personal data protection, unsolicited electronic commercial messages (spam) and cross-border electronic data transfer.

The Andean Community (CAN) has addressed the issue of cross-border e-commerce primarily through eight decisions issued between 1993 and 2006. Although these affect cross-border e-commerce, strictly speaking, they also refer to the digital ecosystem. Four decisions involve trade in services, through which they relate to e-commerce.[12] Another refers to the use of online declarations in goods trade, so its link is much weaker.[13] One decision concerns the regulatory framework for the use of the satellite orbit-spectrum, the application of which indirectly affects e-commerce.[14] Lastly, two of the decisions seek to generate trust, and, as such, they directly boost cross-border e-commerce: the first of these is Decision No. 351 of 1993, which establishes a common copyright regime, and the second is Decision No. 638 of 2006, which sets out guidelines for the protection of the Andean telecommunications user.

In 2014, the Heads of State of the Caribbean Community issued a policy directive to create the Single ICT Space. This seeks to strengthen the legal and regulatory convergence of ICT in the Caribbean in order to invigorate investment and productivity in the digital economy. In 2017, a road map was approved to achieve a free ICT transit space, with the aim of harmonizing policies and regulations, and achieving compatibility

[12] Decision No. 439 of 1998 (General Framework of Principles and Rules and for Liberalizing the Trade in Services in the Andean Community), 462 of 1999 (Provisions Regulating the Integration and Liberalization of the Trade in Telecommunications Services in the Andean Community), No. 510 of 2001 (Adoption of the Inventory of Measures Restricting Trade in Services) and Decision No. 659 of 2006 (Service Sectors Subject to Further Liberalization or Regulatory Harmonization).

[13] Decision No. 571 of 2003 (Customs Value of Imported Goods).

[14] Decision No. 654 of 2006 (Regulatory Framework for Commercial Utilization of Member Countries' Orbit-Spectrum).

between the different laws on e-commerce and online transactions. The roadmap gained the countries' support through the approval of a work plan and a budget to promote the strategy (ECLAC, 2018a).

The member countries of the Central American Common Market (CACM) have not established specific regional regulations for cross-border e-commerce, beyond the implementation of the Central American Single Customs Form (FAUCA) and the use of electronic signature. Similarly, although in 2014 the presidents included preparation of a regional strategy for the information society as part of the agenda of the Central American Integration System (SICA), there has been no information on the subject since 2015, and whether it has been formally adopted is unknown (ECLAC, 2018a).

Nonetheless, CACM has regulations on this type of trade based on the obligations assumed under international trade agreements (Giordano, 2017). For example, the Dominican Republic–Central America–United States Free Trade Agreement, signed in 2004, includes a chapter on e-commerce, which provides that no party will impose tariffs on trade in digital products transmitted electronically. Moreover, the parties will not grant less favourable treatment to some digital products than it accords to similar ones. The Central America-European Union Association Agreement includes a chapter on e-commerce that contains clauses on the non-application of customs duties to deliveries by electronic means and the exchange of data on regulatory issues. The agreement also addresses consumer protection and strengthens authentication and use of the electronic signature.

For nearly two decades, the Southern Common Market (MERCOSUR) has had a working subgroup on e-commerce (SGT 13). Nonetheless, the only resolution that has been adopted is No. 21 of 2004, on the consumer's right to information in commercial transactions conducted over the Internet. It seeks to guarantee the delivery of clear, accurate, sufficient and accessible information about the supplier of the product or service being purchased (ECLAC, 2018a). Resolutions 34 and 37 of 2006 highlight the legal status of the electronic document, electronic signature and the advanced electronic signature; and they provide guidelines for achieving mutual recognition agreements on advanced electronic signatures. In December 2017, the Common Market Council created the Digital Agenda Group (GAD), which it mandated to present a proposal for the Action Plan "MERCOSUR Digital Agenda" during the first half of 2018.

The most recent step forward in this area is the e-commerce chapter in two trade agreements. The first is the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), which was signed in March 2018 by 11 countries, including Chile, Mexico and Peru. Although the United States is not part of this partnership, the chapter on e-commerce mainly considers the objectives pursued by that country during the negotiation of the Trans-Pacific Partnership Agreement (the predecessor of CPTPP). It includes the largest number of obligations and innovations on e-commerce in any trade treaty worldwide. After establishing the scope of application and defining the components involved, the chapter presents 12 articles on e-commerce, which can be grouped into three categories as follows:

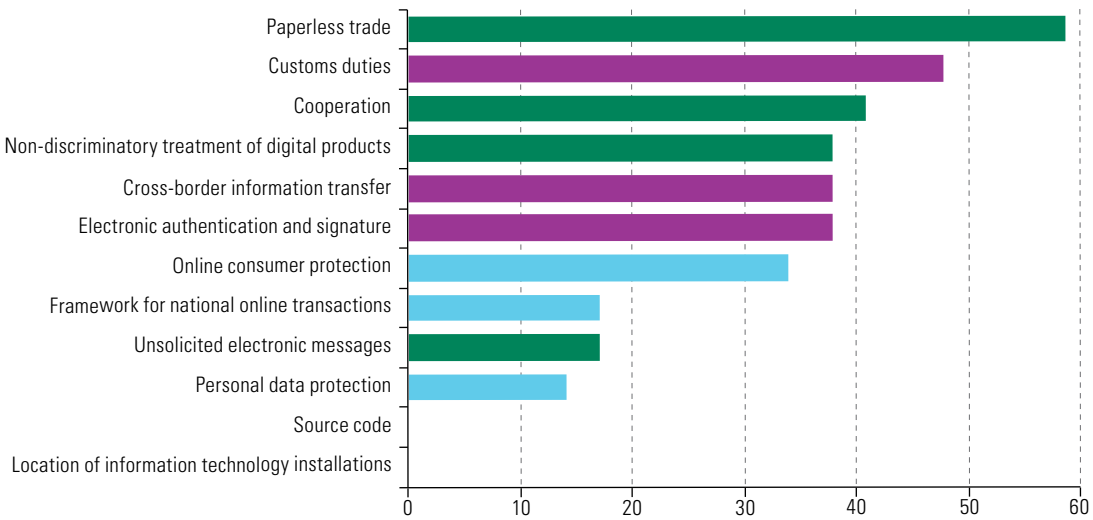
(i) Domestic legislation affecting cross-border transactions: conditions are established for consumer protection, protection of information and the relationship between each country's domestic legal framework and online transactions.

(ii) The free flow of data and the facilitation of e-commerce: the elimination of customs duties for electronic deliveries, the principle of non-discrimination between similar products, principles on Internet access and use for e-commerce, a ban on requiring the use of local servers to conduct business and the commitment to paperless trade.

(iii) Provisions on recognition of the legal validity of electronic signatures, cybersecurity, treatment of unsolicited electronic commercial messages, and a ban on requiring a program's source code to be transferred or made accessible before it can be imported or operated in the country.

A review of 29 preferential trade agreements signed by countries of the region since 1995 found that several include provisions similar or equivalent to those of the respective CPTPP chapter (Giordano, 2017). The 13 agreements with partners outside the region represent a significant deepening of the subject compared to the 16 signed with intraregional partners. Eleven agreements with countries outside the region contain whole chapters, or at least specific provisions, on cross-border e-commerce, compared to just nine of the intraregional agreements. Most of these provisions concern commitments related to trade facilitation, and then market access and user protection. Although most of the agreements analysed contain provisions on cross-border e-commerce, these are at a much lower level than the CPTPP equivalents. Most of the provisions are generic and not exclusive to cross-border e-commerce, such as the automation of customs procedures (see figure II.25).

Figure III.25
Latin America and the Caribbean: provisions on e-commerce in selected agreements
(Percentages)



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of P. Giordano (coord.), *Más allá de la recuperación: la competencia por los mercados en la era digital,* Washington, D.C., Inter-American Development Bank (IDB), 2017.
Note: The provisions on market access are presented in green, those related to trade facilitation are shown in purple, and those concerning user protection are in pale blue.

The second trade agreement with a special chapter on digital trade is the United States–Mexico–Canada Agreement (USMCA), which was adopted in late September 2018, with digital trade provisions that resemble those in CPTPP. Key elements include the prohibition on customs duties on electronic products such as e-books and games and free transmission of cross-border data.[15]

[15] See Office of the United States Trade Representative (USTR), "United States-Mexico-Canada Agreement Text" [online] https://ustr.gov/trade-agreements/free-trade-agreements/united-states-mexico-canada-agreement/united-states-mexico.

3. Countries are starting to take measures

Some governments in the region have adopted measures to encourage firms to enter cross-border e-commerce and reduce user mistrust. This has been done through general training, trade facilitation programmes, logistics development and implementation of new means of cross-border payment. In this context, UNCTAD (2015) established an e-commerce policy framework that was included in the "eTrade for all" initiative, which involves various international organizations that seek to promote this business.

(a) Promoting digital exports

Export promotion agencies in the region's countries have worked mainly on three issues to promote this sector: training, financing of website design and marketing, and platform development. Training is the most common tool, since many of the micro and small-scale entrepreneurs continue to have doubts and fears, particularly regarding export modalities, the existing platforms, forms of payment and guarantees. Accordingly, courses are organized to provide firms with information on how to set up a virtual store, how to develop an e-commerce strategy, which platform can be used, what are the possible means of payment and what legal aspects need to be taken into account, among other information.

The Argentine Investment and Trade Promotion Agency, Brazilian Trade and Investment Promotion Agency (Apex-Brasil), ProColombia and ProMéxico all offer this type of training, both in person and online. In the case of ProChile, these are articulated through a specific programme called *Export Digital*. Brazil, on the other hand, complements the training programmes by providing expert consultants in the target markets to advise entrepreneurs.

The second set of tools frequently used involves assistance to firms in the design of their websites and the formulation of a marketing strategy. For example, ProChile finances website design and translation services. The Institute for Promotion of Trade and Investment (PRO ECUADOR) has projects to support micro, small and medium enterprises (MSMEs) in the design of websites and digital marketing tools, supplemented by the creation of virtual stores to exhibit and sell goods and services abroad. ProMéxico, on the other hand, provides loans to support firms (SMEs, individuals or networks), whether or not either exporting, that wish to hire a consultant to develop an e-commerce and digital marketing strategy.

The third tool is the creation of a government digital platform through which international buyers can contact national suppliers or purchase their products. This serves as a channel to generate the B2B link and incorporate entrepreneurs into global value chains. The country that has progressed most in this area is Mexico, which in early 2018 launched the online platform "Hecho en México B2B Marketplace". Its purpose is to boost SME exports, by promoting and facilitating cross-border e-commerce. The Costa Rica Foreign Trade Promotion Agency (PROCOMER) also created a digital platform tool to help MSMEs join global chains.

The Brazilian e-XPORT platform, launched in late 2017, is not a digital platform in the Mexican sense of the term, but covers other areas such as logistics, commercial strategy, digital marketing and security. It aims to help export firms conquer new markets using cross-border e-commerce tools. For this purpose, it generates alliances with digital platforms, both B2B (such as Alibaba) and B2C (such as Mercado Libre), and with firms that provide payment, logistics and digital marketing services. The region also has more limited digital platforms that serve as a business directory and are intended to put suppliers in contact with sellers, reducing the need for intermediaries (examples are ProColombia and the Argentine Investment and Trade Promotion Agency).

(b) Tools to reduce logistics costs

Postal operators in several countries have set up programmes to reduce the logistics costs associated with inbound e-commerce, especially from China and the United States. They have also recognized the income opportunity presented by this trade and have introduced new services, such as CityBox operated by Correos Chile and TuBox of Correo Uruguayo, a network of self-service mailboxes for parcel delivery.

The Exporta Fácil programme, launched in Brazil in 2000, is an initiative focused directly on reducing shipping costs and difficulties in customs procedures for cross-border e-commerce, with a view to promoting SME exports by using the postal services network. It offers a simplified process for products with a maximum value or weight that varies from one country to another, in which a discount is usually granted on the shipping rate. In 2004, the programme was included in the 31 strategic priority projects of the Initiative for the Integration of Regional Infrastructure in South America (IIRSA) and has since been extended to other countries in the region (Argentina, Chile, Colombia, Ecuador, Peru and Uruguay), with others continuously joining (such as the Bolivarian Republic of Venezuela and the Plurinational State of Bolivia). The ultimate aim of the programme is to integrate the different national platforms and thus facilitate intraregional small shipment trade (Giordano, 2017). The programme does not include express postal service providers.

(c) Good practices and trust seals

To foster trust in cross-border e-commerce, several national associations and chambers of e-commerce have promoted self-regulation through codes of conduct and trust seals (ECLAC, 2018a). An example is the eConfianza regional programme of the Latin American E-Commerce Institute (eInstituto), through which the chambers and associations have set up a system of cross-recognition of national seals (UNCTAD, 2016b). This seeks to foster consumer confidence in cross-border e-commerce, encouraging and generating a wider range of products and services that meet good practice criteria and provide a positive experience for consumers.

The institute's initiative is supported by chambers of commerce in nine of the region's countries, which are pooling efforts to define a code of good practices, in order to facilitate their adoption and reciprocal recognition.[16] As a result, the programme offers applicant firms a roadmap for good practices in e-commerce, which allows them to understand how consumers interact with online services and what services are vital for building trust.

Lastly, the eConfianza seal provides a dispute resolution mechanism, through which users can lodge claims if they consider that the company has breached the seal's code of conduct. The eConfianza regional programme is part of the World Trustmark Alliance, which aims to establish a global network of consumer protection through self-regulation. The Confianza Online association, which awards the Ecommerce Europe Trustmark, is also part of the Institute's programme.

[16] The participating institutions are: the Argentine Chamber of Electronic Commerce, the Brazilian Chamber of Electronic Commerce, the Santiago Chamber of Commerce, the Colombian Chamber of Electronic Commerce, the Guayaquil Chamber of Commerce, the Ecuadorian Corporation of Electronic Commerce, the Mexican Internet Association, the Paraguayan Chamber of Electronic Commerce, the Peruvian Chamber of Electronic Commerce, and the Venezuelan Chamber of Electronic Commerce. They are joined by the Ecuadorian Electronic Commerce Corporation (CORPECE).

E. Fostering cross-border e-commerce

Cross-border e-commerce has major potential benefits. Through a reduction in transaction costs and the emergence of new and better value chains, e-commerce increases productivity, competitiveness, access to markets and the diversification of production and exports. These benefits are not automatic, however, since firms and consumers face the obstacles described above. To overcome or mitigate these difficulties, governments and the private sector need to implement suitable policies.

The challenges faced by Latin American and Caribbean firms and consumers include financing, customs procedures and logistics, the costs of online payments and the interoperability of regulations. The adoption of public policies to solve these challenges could boost the growth of cross-border e-commerce and diversify exports.[17] The recommendations below may promote trade and the digital economy in the region.

First, the region needs to boost the regional digital market. For this, it is crucial to improve official statistics on e-commerce, collecting more and better-quality data, which are comparable between countries. In addition, it is essential to generate legal and technical conditions that enable electronic data exchange between countries, especially in relation to trade. Another key element is to generate the necessary trust among consumers. To this end, governments need to update their legislation, taking into account the context of cross-border e-commerce; and they need to promote mechanisms of self-regulation and cybernetic conflict resolution. Lastly, it is necessary to jointly address the issue of privacy and cybersecurity, where regional cooperation efforts and national strategies must address both technical and organizational and institutional aspects (ECLAC, 2018a).

Second, digitalization and simplification of financing for trade could be promoted, including support for suppliers of alternative financing. Small exporting firms face multiple difficulties in accessing trade financing from traditional banks. In this context, digitalization and alternative finance can help reduce the problem, so their promotion should be studied carefully. For example, some experimental solutions based on blockchain and artificial intelligence have shown promising results in terms of reducing administrative costs.[18] The blockchain also speeds up and reduces the costs of customer verifications ("know your customer"); while digitalization improves banking efficiency. Governments in Latin America and the Caribbean, must encourage banks to digitalize more quickly and make progress on interoperability and the trade ecosystem.

In addition to the banking sector, financing for small businesses could come from online payment and lending platforms. The digital financial technologies sector (technology firms specializing in innovative financial services) is generating far-reaching changes in the entire value chain of traditional banking. This, in turn, provides alternative financing tools to enable SME take-off (ECLAC, 2018a). On the other hand, governments in the region also need to consider how to adapt state financial instruments to the digital age. Loans, capital investments and loan guarantees targeting small businesses, which aim to boost financing for small-scale vendors, must be adjusted to include firms that trade online.

Thirdly, logistics, both generally and in postal services, needs to be modernized and adapted to the needs of local and cross-border e-commerce. Various problems associated with customs, logistics and postal services affect a large proportion of the

[17] The companies interviewed by Nextrade Group stated that elimination of the three main barriers would generate an average increase of 32% in their exports (40% for small companies).

[18] The blockchain is a continuously growing list of records (blocks), which are linked and secured using cryptography.

Latin American and Caribbean firms engaged in cross-border e-commerce. To address these critical areas, the following three measures are suggested:

(i) Expand the Exporta Fácil programme to include express services. Postal services in the region have found a major source of income in e-commerce, which makes up for the decline in traditional shipments. Nonetheless, they currently have a monopoly within Exporta Fácil, which does not promote competition and modernization of the postal services. There are several examples in the world of postal services that have adjusted their business models to prioritize e-commerce in competitive environments.

(ii) Modernize and digitalize customs procedures, particularly with regard to paperless trade. The private sector has already presented solutions —such as Gurucargo— that optimize and digitalize cargo shipments. One possible way to reduce delivery times and cut the associated costs would be to create a trustworthy online vendor programme, similar to the authorized economic operator of the WTO Agreement on Trade Facilitation. Argentina and Chile have taken steps in this direction. Outside the region there have also been joint public–private efforts to expedite the entry of shipments (an example is the Air Cargo Advance Screening Programme (ACAS), which the United States trialled with FedEx, DHL and United Parcel Service (UPS).

(iii) Modernize risk detection by customs services in Latin America and the Caribbean. This is achieved through predictive analysis and machine learning, with a view to identifying illegal shipments and fraudulent transactions designed to avoid tariffs. At the same time, legitimate trade obtains customs clearance more rapidly. These issues are also part of the Agreement on Trade Facilitation that is currently being implemented. Several customs services are applying these practices using big data technology, which guarantees high quality data in real time on the operators and on the authenticity and origin of the products in question, ensuring that all border agencies have access to the same data in real time. Some customs services —including those in the Republic of Korea, Singapore, the United Kingdom and the United States— are already experimenting with blockchains. In January 2018, 15 East African countries announced the launch of a digital free trade agreement consisting of a web of blockchain ledgers that will make it possible to easily generate certificates of origin, for example.

A fourth priority is to reduce the costs of cross-border online payments. Currently, these make it difficult for many firms in the region to sell products and services online abroad. Countries need to address the issue through training, the establishment of public–private partnerships and dissemination, while considering regulatory changes. Regarding the latter, countries could consider altering taxes and foreign exchange commissions, especially for low-value consignments, for example through concerted action between regional central banks.

A fifth topic involves improving the interoperability of digital regulations between the different countries. In Latin America and the Caribbean there is still a long way to go to establish good digital regulations in areas such as safe harbours for Internet services, consumer protection laws and systems, and regulations on alternative finance. It is essential that governments work together to ensure the interoperability of these regulations. Otherwise, firms will be unable to sell their products and services easily throughout the region, because they will have to worry about complying with different copyright laws, consumer protection, liability and data. This mainly affects small businesses, which are less likely to assume the costs of complying with different national digital regulations.

The region's governments must move towards creating an interoperable digital regulatory framework. For example, free trade agreements can be used to improve interoperability and cooperation in digital regulations, as was done in the agreements between Chile and Uruguay or between Chile and Argentina. The economies of Latin America and the Caribbean also need common and comprehensive cybersecurity regimes and standards, developed jointly by governments and the private sector, in order to share information on cyber attacks and levels of preparedness to deal with them.

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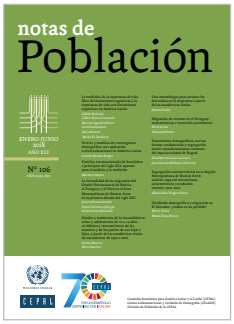

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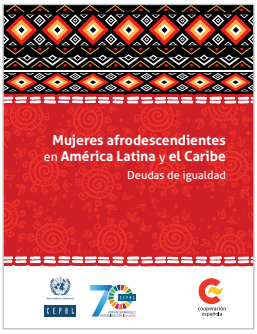

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