A Virtuous Cycle of Integration:
The Past, Present, and Future of Japan-Latin America and the Caribbean Relations

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Introduction

After an unprecedented decade of growth, economic integration between Latin America and the Caribbean (LAC) and Asia has begun to encounter headwinds. Trade flows have contracted from their peak in 2011 amid a growth slowdown in China and falling commodity prices, and investments have, in some cases, failed to meet sky-high expectations. Some voices in LAC have questioned whether closer ties to Asia are the best bet for the region's future. But rather than justifying a change of course, the current challenges call for renewed efforts to deepen and diversify economic relations with Asia, building on, rather than dismantling, more than a decade of progress in the 21st century.

In this report, we examine economic integration between Japan and LAC. Far from being a recent trend, this relationship has evolved and diversified over the course of a century, encountering—and overcoming—its fair share of headwinds along the way. From an initial focus on minerals and agriculture, the relationship now encompasses a broad panorama of trade, direct investment, government-to-government cooperation, and migration that has shaped the development of sectors from automobiles to alternative energies. And while trade continues to be defined by the commodities-for-manufactures pattern, this is not necessarily a cause for despair. Japanese investment and cooperation have helped LAC add value and introduce new technologies to natural resource sectors, exposing the myth that these activities cannot foster innovation as just that.

Japanese firms are also a major source of manufacturing foreign direct investment (FDI), producing a range of consumer and capital goods throughout the region. This presence has in turn fostered additional trade linkages and helped establish nascent value chains between Asia and LAC. These ties did not always develop organically. As the report illustrates, governments on both sides have played a major role in facilitating trade and investment links—and in some cases even creating new ones through innovate cooperation projects. The interrelatedness of trade, investment, and government cooperation is a key factor in the Japan-LAC story, and a focus of this report.

For all their successes, however, governments and firms can do more to deepen integration. A good place to start would be eliminating remaining

trade barriers, especially the non-tariff barriers that still pose considerable obstacles in many important sectors. Japan's bilateral Economic Partnership Agreements (EPAs) with Mexico, Chile, and Peru, participation in the Trans-Pacific Partnership (TPP) process, and observer status in the Pacific Alliance (AP) represent important steps toward addressing barriers to the movement of goods, services, people, and capital. Moving forward, it will be important to ensure that countries not part of these initiatives are not left out of the gains.

For both LAC and Japan, seizing these opportunities is more important than ever, as the period of "easy gains" that characterized the 21st century trade boom has clearly come to an end. Building on this strong and diverse relationship can also provide a roadmap for the region's broader relationship with Asia.

Trade, Investment, and Cooperation: the Logic of "Progressive Integration"

Countries pursue economic integration because it holds the promise to enhance welfare and promote development. As students of economics know, this powerful idea traces its lineage back to classical economics. In David Ricardo's view of "gains from trade," each trading partner is better off when both dedicate more resources to their comparative advantage sectors and exchange final goods. Through trade, countries can consume more goods with the same basic inputs, increasing overall wellbeing.

More recent thinking has shown that such one-off welfare gains—so-called "static gains"—represent only a part of the potential benefits of economic integration. Critically, trade and foreign investment can increase the productivity of individual sectors and firms. At the sector level, exposure to trade tends to reallocate market share towards more productive firms, thus raising average productivity. For individual firms, exposure to trade presents opportunities to acquire new technology (broadly conceived), makes higher-quality inputs available, and creates pressure to enhance competitiveness by reducing costs and "slack." Importantly, by improving firm and sector productivity, these effects have the potential to deliver an ongoing, continual boost to economic growth. In other words, they represent dynamic rather than static gains.

Another positive externality of trade linkages is their potential to encourage deeper forms of integration. One example is through FDI, in which foreign firms set up production facilities in a host country. FDI can bring similar effects to bear on local firms as trade. The presence of multinational corporations (MNCs) can produce knowledge spillovers, as local firms adopt new processes and technologies from the MNC; induce local partners to enhance quality and productivity to meet specifications of MNC production processes (linkage effects); and create pressure for local firms to boost competitiveness. In addition to these effects on local firms, FDI brings an array of more general economic benefits, such as the creation of (often higher-paying) employment, increased investment capital, and diversification into new economic sectors.

The relationship between trade and FDI is complex and multifaceted. Trade has the potential to encourage FDI in several ways. Most importantly,

trade serves an informational function, helping firms gain necessary knowledge about the conditions, preferences and business environment in a foreign market before making an investment. Initial exporting success nearly always precedes a direct investment. In turn, the presence of a foreign affiliate in a country can deepen and diversify trade linkages. While FDI has been seen as a substitute for trade in certain situations, in a global economic environment increasingly defined by global value chains (GVC), in which trading partners contribute raw materials, parts, and services to cross-border production processes, MNCs are embedded in a complex network of forward and backward linkages to other markets. These dynamics increase trade-FDI synergies. In addition, MNCs often use foreign production to serve third markets (so-called export platforms), directly increasing the host economy's exports.

There is also an important role for government-to-government cooperation in fostering these processes of deeper integration. While formal trade theories focus exclusively on firms and factors of production, the public sector is crucial for countries to reap the benefits of economic integration. The literature on regional integration, for example, suggests that cross-border economic activity produces externalities and market failures that are best addressed by governments. Examples include divergence in the rules and regulation governing trade and investment between countries and inadequate infrastructure to handle increased movement of goods. The former is, of course, the realm of traditional free trade agreements (FTAs), while the latter entails a more proactive effort to provide specific public goods to facilitate economic integration. In recognition of this fact, contemporary trade agreements often incorporate cooperation in policy domains such as infrastructure, information sharing, and capacity building for small and medium-sized enterprises (SMEs).

These forms of cooperation aim to enhance the ability of local firms to take advantage of the opportunities of greater economic integration. This matters because despite the overall gains, economic integration inevitably creates distributional concerns that countries ignore at their own risk. For example, if local firms lack the capacity to supply an MNC in their sector, they may be undercut by imported inputs. Beyond the direct effect on these firms, the economy as a whole misses an opportunity to increase domestic value added in MNC production processes. Government actions can thus enhance the readiness of local firms to make the most of the opportunities of economic integration.

Another important but at times overlooked actor in integration processes are individuals themselves—in particular, migrants who often provide the first link between geographically distant economies. Immigration has been shown to have trade-creating effects, helping reduce informational barriers and alleviate trust and reputational concerns that can stand in the way of trade.[1] Immigration flows, in turn, often respond to incentives created by government policy. Increasing immigration thus provides another mechanism through which the public sector can encourage, indirectly, deeper economic integration.

In this way, these pillars of economic integration—trade, investment, cooperation, and migration—mutually support and deepen one another. Trade generally provides the first point of contact between two economies. Once exposed to the conditions of a new market, firms deepen integration through direct investment, which in turn expands trade relations through backward and forward linkages to other markets. Deepening integration creates demands for public goods ranging from regulatory harmonization to infrastructure, and the provision of training and information that help ensure the theoretical benefits of integration actually materialize—and are shared widely. This cooperation in turn creates additional incentives and conditions for further trade and investment. The flow of migrants between economies offers a further channel to create new trade linkages and can also give governments additional motivation to cooperate.

With this "progressive" framework in mind, we can better understand the full extent of Japan-LAC integration. As the following sections show, the relationship goes well beyond mere trade to encompass a complex range of inter-dependencies and relationships that include firms, governments, and people.

[1] See for example Rauch and Trindade, "Ethnic Chinese Networks in International Trade." *The Review of Economics and Statistics*, February 2002.

Overview of Japan-LAC Economic Relations: Building a Diverse Partnership

The recent surge of interest in LAC-Asia trade has created the impression that these relationships are new. The reality is far different, as the story of Japan's economic ties to the region amply demonstrates. Japanese immigrants began to arrive in the region in the late 19th century, settling in areas such as São Paulo, Lima and other parts of LAC. Between 1908 and 1924 around 100,000 Japanese citizens emigrated to Brazil and Peru alone.[2] These nascent immigrant communities, which would grow into important Japanese diasporas, provided the initial impetus for trade between the economies.

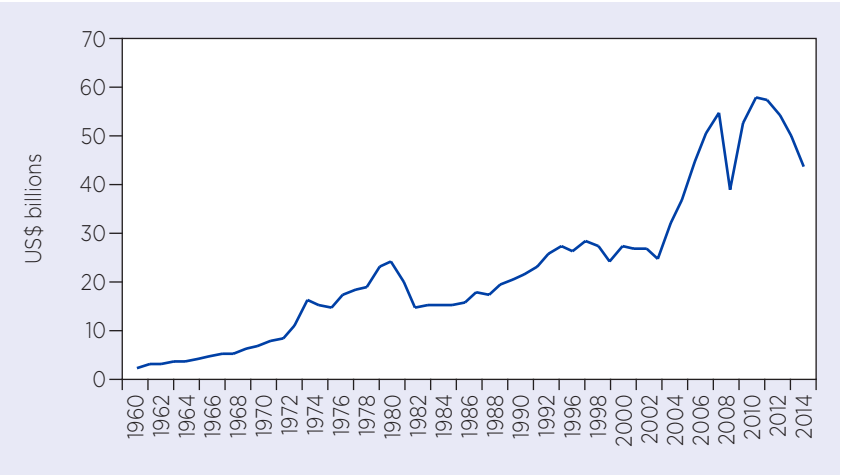
By the mid-20th century, Japan and LAC had become important commercial partners. The region provided much-needed mineral and energy inputs into Japan's burgeoning industrial sector. Rapidly growing and increasingly globally competitive Japanese manufacturing firms in turn provided a wide range of consumer and capital goods to LAC markets. If this trade structure resembled the "typical" LAC-Asia pattern, Japan's relations with LAC would soon diversify and deepen in several important ways.

First, Japanese industrial firms began to invest heavily in the region, both to consolidate their presence in LAC's growing consumer markets and to take advantage of the region's geographic proximity and market access to the U.S. These investments contributed to a process in which Japanese exports to the region have evolved from consumer products to mostly intermediate and capital goods. In addition, the Japanese government has engaged in a robust cooperation program aimed at transferring technology and management practices to help boost LAC's own industrial development and even establish new industries based on the region's rich natural resource endowment. At the same time, migration between Japan and LAC took on a new dimension, as Latin Americans of Japanese origin—so-called *Nikkei*—began to emigrate back to Japan in considerable numbers in the 1990s.

These factors have served to broaden the economic relationship between LAC and Japan well beyond comparative advantage-based trade. This section provides a condensed overview of trade, investment, cooperation, and migration between LAC and Japan, showing how each one has contributed to creating a diverse and continually evolving partnership.

[2] Yamato Ichihashi, "International Migration of the Japanese." In Walter Wilcox ed. *International Migrations, Vol II: Interpretations*. 1931.

FIGURE 1/
Japan-LAC total trade, 1960–2015



Source: IDB/INT based on IMF Direction of Trade Statistics (DOTS).
Note: Trade values in real 2010 dollars.

Trade provided the impetus for the first phase of Japan-LAC integration in the mid-20th century. After WWII, Japan's rapid industrialization required growing imports of the minerals, fuel, and other primary materials the region produces in abundance. The initial trade surge in the 1960s and 1970s (see Figure 1) was therefore based on the exchange of LAC's raw materials for Japanese manufactures. This burgeoning exchange, however, hit a roadblock in the early 1980s when debt crises beset most LAC economies. Total trade between Japan and LAC (in real terms) did not return to 1981 levels until the mid-1990s.

Trade grew steadily during the 1990s, before experiencing a distinct surge between 2003 and 2013, partly in response to global trends such as booming commodity prices, but also as a result of Japanese firms' strategic decision to focus on the region's growing consumer markets and industries. Recent years have seen a drop off in trade, however, with total bilateral trade shrinking each year since 2012. Still, overall growth since 2003 has been considerable: bilateral trade has increased at an annual average of 6 percent, with LAC exports to Japan slightly outpacing its imports. Despite this expansion, LAC's share of Japan's trade has remained more or less stable at around 4 percent since 1990, while Japan's share of the region's total trade fell from 6 percent in 1990 to less than 3 percent in 2015, overshadowed by the tremendous rise of China among the region's trade partners.

As a result of its commodities-for-manufactures pattern, Japan's trade with the region has been concentrated in a handful of countries and

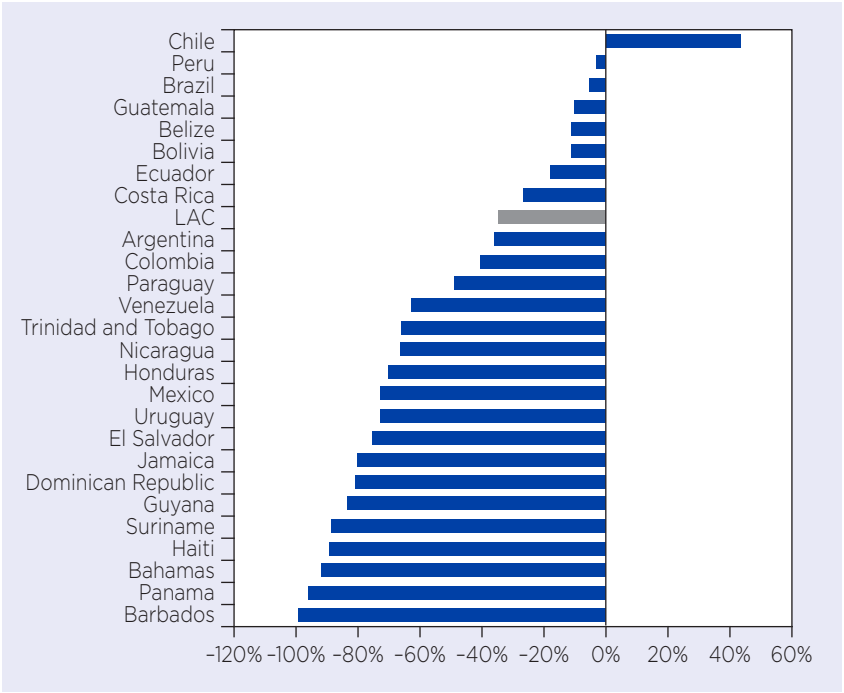
products. On the export side, Brazil and Chile alone accounted for two thirds of LAC exports to Japan between 2012 and 2015, reflecting their status as major producers of iron ore and copper, the region's top exports to Japan. These minerals, along with a handful of other primary products, make up the bulk of LAC's exports (see Table 1). By contrast, imports from Japan are more diversified, reflecting the wide range of manufacturing

TABLE 1/
Top products in Japan-LAC trade, 2012–2015

Product Code	LAC Exports	Share (%)	Accumulated Share (%)
260300	Copper ores and concentrates	26.9	26.1
260111	Non-agglomerated iron ores and concentrates	8.6	34.7
020714	Cuts and offal, frozen	4.5	39.2
090111	Coffee, not decaffeinated	4.3	43.5
100590	Maize, other	3.7	47.2
260112	Agglomerated iron ores and concentrates	3.4	50.6
270900	Petroleum oils and oils obtained from bituminous minerals	2.8	53.3
760110	Aluminum, not alloyed	2.4	55.7
020329	Meat of swine, other	2.1	57.9
030319	Frozen fish, other	2.1	60.0
	LAC Imports	**Share (%)**	**Accumulated share (%)**
870323	Motor vehicles with cylinder capacity between 1,500 and 3,000 cc	8.3	8.3
870840	Gear boxes	2.9	11.2
901390	Parts and accessories of liquid crystal devices	2.3	13.5
852990	Electrical machinery parts, other	2.2	15.7
870322	Motor vehicles with cylinder capacity between 1,000 cc and 1,500 cc	2.1	17.8
854221	Digital electronic integrated circuits	2.0	19.8
844390	Parts of printing machinery	2.0	21.8
840991	Parts of nuclear reactors, solely or principally with spark ignition internal combustion piston engines	1.8	23.6
870829	Parts and accessories of tractors	1.5	25.1
870899	Steering wheels or columns of tractors	1.5	26.6

Source: UN Comtrade.

FIGURE 2/
Accumulated trade balances, 2000–2015 (as share of total trade)



Source: IDB/INT based on IMF DOTS.

sectors involved in Japan-LAC trade. Here, Mexico alone absorbs nearly half of the region's Japanese imports, followed by Brazil (20 percent).

However, this is not to say that LAC manufacturing exports to Japan are nonexistent. Manufactures made up 12 percent of total LAC exports to Japan between 2012 and 2015 and account for some of LAC's fastest growing export products in the past decade.

Another feature of Japan-LAC trade that mirrors the broader patterns seen with Asia is a large and growing overall trade deficit. As Figure 2 shows, only Chile has achieved an overall trade surplus with Japan over the past decade and a half. However, it is important not to read too much into these bilateral trade balances, which give only a partial view of the distribution of benefits. As discussed in more detail below, a large and growing share of LAC's manufacturing imports from Japan consist of intermediate goods and inputs for LAC-based production—an important portion of which is exported to third markets. The growth of this value-chain based trade thus diversifies the economic relationship in a way not captured by bilateral trade data.

FDI represents another important channel to diversify the economic relationship and achieve a broader distribution of benefits. Japan's

emergence as a global manufacturing leader in the mid-20th century gave rise to a host of innovative, globally competitive firms that soon ventured abroad in search of new markets, greater efficiency in production, and access to raw materials. Latin America has figured prominently in these strategies, initially as a source of natural resources, and starting in the 1990s, as a key manufacturing platform. In recent years, Japanese investment has further diversified to encompass high-end services such as IT and clean energy, while increasing its participation in traditional natural resource and manufacturing sectors. Despite this activity, Japan's share in the region's total FDI flows has fallen off in recent years, averaging an estimated 3 percent during 2014 and 2015 as opposed to 5 percent between 2011 and 2013.[3]

In the first stage of Japanese FDI in LAC, natural resources were the clear priority. Eager to secure inputs needed in industrial production at home, major conglomerates and trading companies such as Mitsubishi, Mitsui, Sumitomo, and others took large stakes in mining projects in LAC beginning in the 1960s. This investment surge was so strong that by 1965 LAC was the largest destination for Japanese FDI, with 25 percent of the accumulated total. However, trends on both sides of the Pacific—a prolonged economic slump in LAC and new strategies on the part of Japanese firms—led to a drop off in LAC's share of Japanese FDI during the 1980s.

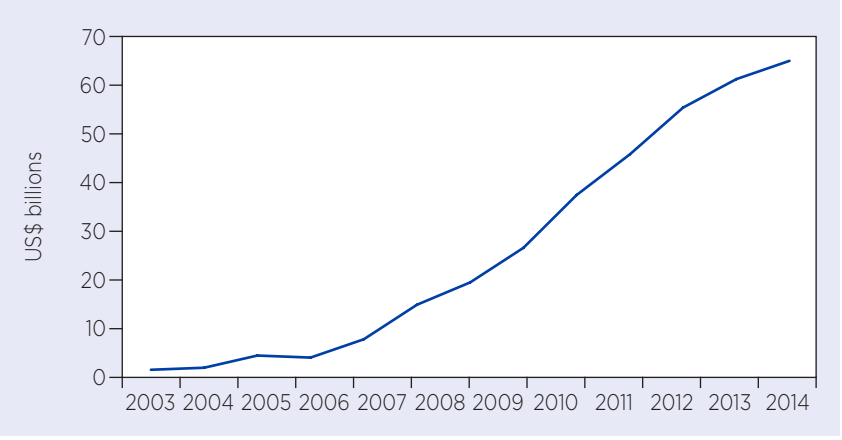
Japanese firms rediscovered the LAC market in the subsequent decade, with FDI inflows increasing at an annual average rate of 35 percent in the 1990s.[4] These investments were aimed primarily at LAC's largest markets. Brazil received 48 percent of total Japanese investment over the course of the decade, comprising a diversified mix of manufacturing, services, and investments in mining and forestry sectors. Mexico captured another 23 percent of the total, as the country became increasingly attractive as an export platform to the U.S. after the entry into force of the North American Free Trade Agreement (NAFTA) in 1994.

These trends of growing and increasingly diversified Japanese FDI continued into the 21st century. As Figure 3 shows, FDI inflows experienced another surge starting in 2006, corresponding to and reinforcing the trade boom during that period; the pace of inflows has, however, subsided since 2013, also mirroring trends in trade. This investment has had several dimensions. On the one hand, the early 2000s commodity boom sent a new wave of Japanese FDI into the region's natural resource sectors. As the next section discusses, these Japanese investments have increasingly

[3] Based on data from the Japan External Trade Organization (JETRO) and estimates from ECLAC; when discussing FDI, all figures exclude tax havens.

[4] Based on data from Japan's Ministry of Finance.

FIGURE 3/ Accumulated Japanese FDI inflows to LAC, 2003–2015



Source: JETRO.

gone beyond the resource extraction phase to include other activities such as infrastructure, logistics, and even energy generation around mining sites, often with financial support from the government-owned Japan Bank of International Commerce (JBIC).

Secondly, strong growth among LAC's middle classes made the region an increasingly attractive market for Japanese companies producing consumer goods such as cars, electronics, and home appliances. Finally, several LAC countries consolidated their position as key export platforms for Japanese manufacturers in the 2000s. Here, the emblematic case is Mexico, whose expanding FTA network and proximity to the U.S. has led to dozens of major investments over the past decade by Japanese automakers in particular. Interestingly, this process has created spillovers to smaller neighbors in Central America, where several Japanese auto parts firms have set up operations to supply Mexico-based car manufacturers.

The upshot of these various trends is that Japan's FDI footprint in LAC is well-balanced among the primary (22 percent), manufacturing (40 percent), and services sectors (35 percent).[5] Foreign investment has thus served to broaden the profile of Japan-LAC integration, providing new opportunities for domestic production in LAC and increasing the supply of related services. In addition to direct employment opportunities, FDI has brought technology transfer, managerial know-how, and new business opportunities for local providers that represent broader spillovers to the local economy.

[5] Based on Ministry of Finance's International Investment Position as of June 2015; the shares do not add up to 100% due to a portion of FDI listed as "unspecified."

Governments on both sides have taken critical steps to support this relationship and help ensure a broader distribution of its benefits. For starters, trade between the two economies has benefitted from considerable liberalization over the past several decades. In LAC, average tariffs have been slashed from around 40 percent in the 1980s to less than 9 percent today, and non-tariff barriers such as import quotas and licensing have been eliminated. Japan too has reduced tariffs and done away with other barriers to trade that were widespread during the 1970s and 1980s. Three LAC countries—Chile, Mexico, and Peru—have signed Economic Partnership Agreements (EPAs) with Japan. These wide-ranging agreements encompass not only traditional trade liberalization but also efforts to foster investments and promote a broader cooperation agenda. In addition to these bilateral agreements, the Pacific Alliance, a regional integration initiative among Chile, Colombia, Mexico and Peru, has helped deepen links with Japan, which participates in the bloc as an observer country. Meanwhile, the recently-signed Transpacific Partnership (TPP) could improve market access among Japan and the three LAC members: Chile, Mexico, and Peru.

Despite these advances, there are still lingering barriers. Tariff rates continue to be high in some LAC countries and product lines, while Japan's use of non-ad valorem tariffs and tariff escalation remains an issue, especially in agriculture. In addition, formal integration agreements have, so far, been limited to a small group of LAC countries, as the examples above show, creating the risk that Japan-LAC integration becomes bifurcated between LAC sub-regions.

Beyond the realm of trade policy, Japan engages in a robust cooperation program in the region. The Japan International Cooperation Agency (JICA) works in nearly every LAC country, providing financial and technical support in areas ranging from disaster preparedness to SME development. In addition, the Japan Bank of International Cooperation (JBIC) has supported infrastructure projects throughout the region with the aim of facilitating trade and investment operations. As the examples in this report illustrate, this cooperation has been fundamental in facilitating and spreading the benefits of economic integration.

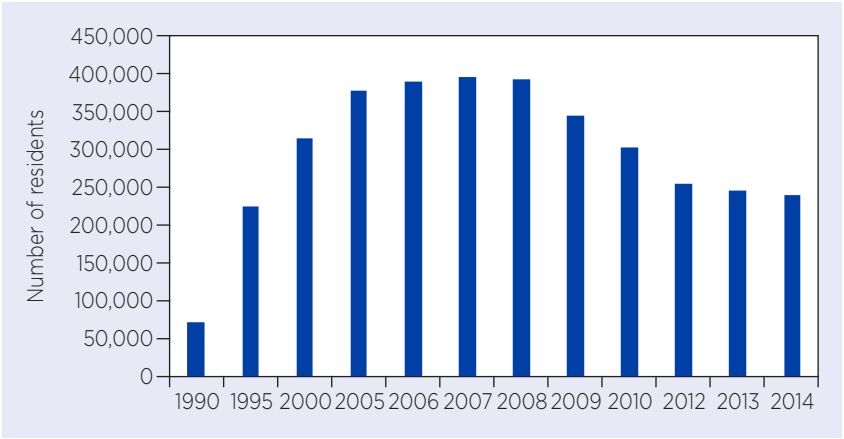
Throughout the entirety of the Japan-LAC integration story, migration has played a consistent yet unheralded role. In fact, the first economic exchanges between the economies in the modern era took the form of Japanese immigrants who arrived in Brazil and Peru (and to a lesser extent

in Argentina, Bolivia, and Paraguay) as laborers in the late 19th and early 20th centuries. The initial impetus for this flow of people was a series of agreements signed between Japan, which faced demographic challenges at home, and LAC governments in need of labor for the region's vast sugar, coffee, and rubber plantations. These early migrants faced difficult working conditions that led many to abandon their farm jobs, but they persevered and established stable immigrant communities, especially in Brazil's São Paulo state and around Lima in Peru.

Since then, the Japanese diaspora in the region, or *Nikkei*, has done much to foster economic ties and cooperation initiatives. Japanese-Brazilian farmers, for example, enthusiastically supported the work of Embrapa to expand agriculture in Brazil's Cerrado region with the help of Japanese cooperation. Some Japanese immigrants and their descendants became entrepreneurs and have launched successful, global firms. Examples include Shunji Nishimura, who turned a one-man repair shop into Jacto, a manufacturer of farm equipment that now employs 4,000 workers and exports to over 100 countries; and Bento Koike, the son of immigrant farm laborers, who founded Tecsis, a producer of custom blades for wind turbines that was recognized as one of Brazil's top exporters in 2010.

Beginning in 1990, a new phase in migration between Japan and LAC opened with the arrival of Latin Americans of Japanese origin in Japan. Initially a trickle, these "reverse migration" flows increased sharply throughout the 1990s and early 2000s as Figure 4 shows. By 2004 Brazil

FIGURE 4/ LAC foreign national residents in Japan



Source: Japan Statistical Yearbook.

had become the third-largest source of foreigners in Japan, although migratory flows have fallen off somewhat since the mid-2000s.

Nevertheless, these new migrants with recent links to LAC can help forge deeper economic ties; familiarity with the culture and business practices of two countries can give such migrants an upper hand in trade. In recognition of this potential, JICA has programs aimed at promoting business relationships and technology exchange between *Nikkei* business owners in Brazil and Peru and Japanese firms. LAC governments, too, could adopt policies to more deliberately take advantage of this facet of relations with Japan.

The following sections examine Japan-LAC relations through the lens of three broad economic sectors—natural resources, manufacturing, and services. In taking this approach, the aim is to illustrate how the interactions and complementarities among trade, investment, and government cooperation have shaped the relationship, propelling an evolving process of deeper integration.

Natural Resources: Comparative Advantage and Beyond

Natural resources have been the lifeblood of the Japan-LAC economic relationship, providing the original motivation for Japanese firms' forays into the region in the mid-20th century. To see why, consider Figure 5, which compares Japan's endowment of forestry, agricultural, and water resources with those of LAC. Japan's relative scarcity of such resources (even more acute than China's) made the economy reliant on imports to fuel its rapid industrialization in the decades after WWII, helping drive the initial trade boom between the economies. LAC exports of agricultural products, minerals, and fuels to Japan grew by an annual average of 17 percent between 1962 and 1973.

Since then, Japan's presence in this sector has deepened and evolved. While trade growth subsided amid low commodities prices in the 1980s and 1990s, the early 21st century witness a renewed trade boom in the natural resource sector, based on strong commodity prices and sustained high demand in Japan. In addition to arm's length trade, Japanese firms have invested directly in various stages of natural resource value chains, contributing physical capital, technology, and know-how to these operations. As discussed above, Japanese FDI in the region has seen fast growth since 2004, with major investments in natural resources playing a role in that growth.

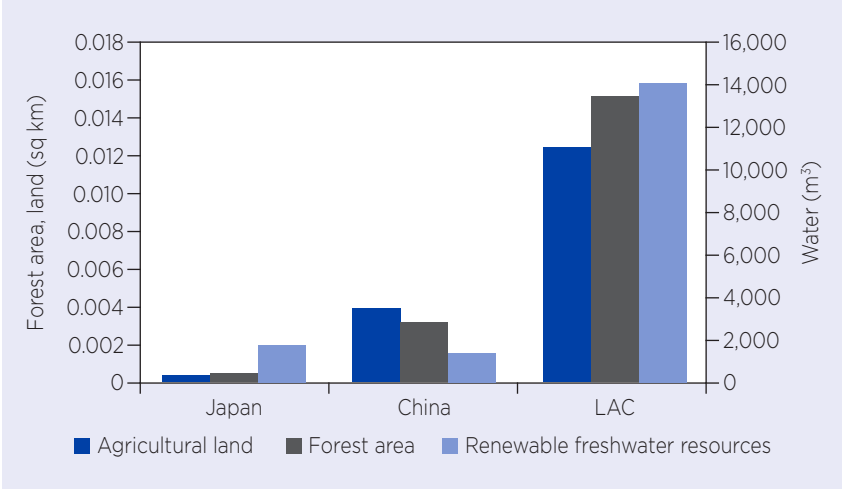


FIGURE 5/ Japan, China and LAC natural resource endowments

Source: World Bank World Development Indicators.

Official FDI data, moreover, do not always capture the full extent of Japanese firms' activities, which include investments in the marketing and logistics phases of natural resource value chains. In addition, Japanese firms have recently been at the forefront of clean energy investments in the region, facilitating LAC governments' efforts to transform their energy matrices. In many of these efforts, Japanese government agencies such as JICA and JBIC have played a key role through the provision of technical and financial support to LAC and Japanese partners. The diverse participation of Japan in these sectors shows that natural resources can be fertile ground for technology and innovation.

Mining

Minerals have long been a driver of Japan-LAC integration. Copper and iron ore have been among the top LAC exports to Japan since the 1960s and were also the focus of much of the first wave of Japanese FDI in the region, which was dominated by large trading companies that controlled distribution channels to Japanese domestic industry.[6] Japanese firms have built on this early presence, diversifying into new sources of mineral resources and investments in surrounding marketing, transport, and energy infrastructure. The past decade has seen major Japanese firms take on larger ownership shares in mining assets, partly in response to intensified competition for resources with emerging markets.

In Chile, for example, Mitsui entered into an important partnership with Chile's state-owned copper company, Codelco, in 2012, while Japan's Pan Pacific Copper Company has invested heavily in the Caserones Mining Project since acquiring it in 2006, the first instance of a Japanese company developing a fully-owned large-scale mine project. In Bolivia, meanwhile, Sumitomo Corporation operates the San Cristobal zinc, lead, and silver mine, one of the country's largest. While a drop in mineral prices since 2012 has forced some firms to scale back investment plans, these moves reflect a long-term interest in the sector.

In addition, Japanese firms have often made investments in surrounding infrastructure, helping deal with the perennial problems of accessibility and sustainability of mining sites. Mitsubishi, for example, has built water desalination and electricity generation facilities surrounding mines in Chile. These projects often benefit from financial support from the Japanese government through JBIC, whose mandate to help Japanese firms secure natural resources for national industries has led it

[6] ECLAC, *Foreign Investment in Latin America*, 2000.

to support railways, roads, electricity grids, and water delivery systems throughout LAC.

Energy

The region's important oil and gas reserves and vast alternative energy potential have also been a major point of attraction for Japanese firms. As Figure 6 shows, LAC exports in this sector have been less dynamic than in mining. Instead, Japan's participation has focused on investments in extraction, refining, distribution, and electricity generation. In the traditional oil and gas sectors Japan has investments throughout the region, especially in Brazil, Colombia, and Peru.

These projects go beyond merely extracting resources and shipping them back to Japan. A good example is a project operated by Mitsui in Peru, which extracts liquid natural gas (LNG) for export to several markets, including to Mexico where the firm also operates a regasification plant at the port of Manzanillo. From there, Mitsui helps supply energy to Mexico's Bajío region, home to a booming auto industry. This example illustrates well the importance of investment spillovers: both to downstream activities and to other parts of the region.

Japanese firms have also been important partners in the region's efforts to develop alternative energies. Companies such as Mitsui, Mitsubishi, and Panasonic are among the global leaders in building renewable energy

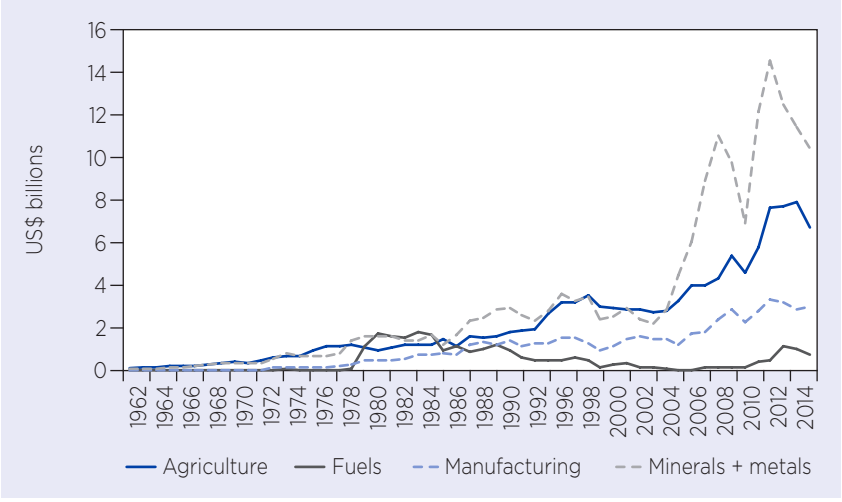


FIGURE 6/
LAC exports to Japan by product category, 1962–2014

Source: IDB/INT based on UN Comtrade.
Note: Product categories based on SITC 1 classifications.

infrastructure. Mitsubishi has participated in wind projects in Chile, including financing for the 115MW El Arrayán wind farm, the country's largest. Panasonic has participated in major solar panel projects in Mexico and Central America.

Alternative energy projects have been a priority for Japan's international cooperation, which has played a key role in fostering the commercial exchange in this sector through financial and technical support from JBIC and JICA. Through its GREEN initiative supporting projects that reduce greenhouse gas emissions, JBIC has helped finance alternative energy in Brazil, Costa Rica, Colombia, and Mexico since 2011. In addition, JICA has supported recent clean energy projects such as geothermic plants in Costa Rica (in conjunction with the IDB through a recently-renewed co-financing agreement to support renewable energy in LAC) and in Bolivia, where JICA technical assistance is helping deal with the unique challenges of geothermal development at 5,000 meters above sea level. This cooperation underscores the important role for the public sector in leveraging resources to expand the Japan-LAC relationship into new areas.

Agriculture and Fishery

Agricultural and fishery products such as coffee, frozen fish, and meats have been among LAC's top ten exports to Japan in recent years. Unlike in the mineral and energy sectors, however, FDI has been less significant in this area, making up only 0.5 percent of Japan's total FDI stock in 2015, compared with 22 percent for the primary sector overall.

However, Japan's footprint on the region's agricultural and fishery sectors is not fully captured by current trade and investment figures. Over the course of several decades, the Japanese government through JICA and other public institutions has contributed technical knowledge and financial support to boost productivity and the technical capacity of the region's producers. Two notable examples are Japan's role in developing Chile's thriving salmon industry and Brazil's principal agricultural export region known as the Cerrado.

Both examples provide excellent studies of how government-to-government cooperation can deepen an economic relationship by creating new market opportunities. In the first instance, JICA began to participate in an initiative of the Chilean government to develop a salmon farming industry, launching the "Japan-Chile Salmon Project" in 1969.[7] The Chilean

[7] This discussion is based on Hosono, Iizuka, and Katz, eds. *Chile's Salmon Industry: Policy Challenges in Managing Public Goods*. Springer, 2016.

government viewed salmon farming as an attractive strategy to create economic opportunities in its isolated Southern regions. For Japan, the project in Chile held the potential to diversify away from Northern Pacific fishing stocks.

Cooperation over the ensuing decades between JICA and Chile's Ministry of Agriculture (SERNAP) and Institute for the Promotion of Fisheries (IFOP), provided critical initial technology and infrastructure inputs to establish the viability of the new sector. These included transferring equipment, training technicians, and performing tests to adapt farming functions such as stock buildup, feed development, and disease control to new conditions in Chile. The public sector thus facilitated investments that the private sector would likely have been unwilling to make at the initial stage. Cooperation paved the way for investment from private firms: Japanese fishery Nichiro (now Maruha Nichiro Seafoods), with financial support of a public financial institution in Japan that later merged with JICA, was the first private player to attempt salmon farming, becoming a pioneer of what would emerge as a booming export industry by the 1990s. The sector attracted large Japanese FDI inflows, and Japan absorbed around half of the sector's exports during this period, aided by firms' existing distribution channels and knowledge of quality and regulatory standards in Japan.

A similar story unfolded in Brazil's Cerrado, where a once-abandoned region emerged as a global agricultural powerhouse, converting Brazil from a net importer of grains to one of the world's largest exporters in a mere quarter century.[8] Beginning in the 1970s, Embrapa, the Brazilian Agricultural Research Company, developed a series of innovations to transform the vast, dry Cerrado into hospitable territory for farming and raising livestock, including, crucially, the creation of a soybean variety capable of growing in central and northern Brazil's tropical climate. Japanese cooperation helped support the programs to develop and spread these new farming techniques to regions throughout Brazil.

As with the case of salmon farming in Chile, this story played out over decades and involved various actors. In 1979, Japan and Brazil initiated the Japanese-Brazilian Cooperation Program for Cerrado Development (PRODECER), to establish pilot projects to put these research advances into practice. PRODECER set up 21 settlements on 345,000 hectares of total land to launch family farms on the Cerrado frontier. Japanese-Brazilians played a role in this process: a group of second- and third-

[8] This discussion is based on Hosono et al. *Development for Sustainable Agriculture: The Brazilian Cerrado.* Palgrave Macmillan, 2016.

generation Japanese immigrants formed an agricultural cooperative, one of the country's largest at the time, which notched a critical early success for the new production techniques.

The project sites fostered a participatory model where farmers learned from each other and contributed to calibrate new approaches, helping expand the project to other regions and crops such as corn, coffee, vegetables, sugar cane, and a diverse range of grains. Once the viability of Cerrado agriculture was established, the PRODECER project was extended through two subsequent phases, helping disseminate Empraba's innovative technologies to farmers in different parts of the country. JICA and Japanese private banks also provided financing through Brazil's Central Bank to family farmers in the region. Thanks to production in the Cerrado, Brazil has become the world's second-largest exporter of soybeans—a crop once believed impossible to grow in the tropics. Cerrado farms also produce a range of other export crops and provide key inputs to the region's dairy and meat production.

Despite these important successes, it is worth mentioning that governments could take additional steps to boost integration in the agriculture sector. Here, the main issues have to do with straightforward trade barriers: tariffs remain high on many agricultural goods, especially when Japan's non-ad valorem tariffs—which are applied mainly to product lines such as animal and vegetable products and processed foods—are included. In addition, LAC exporters in the agricultural sector have to contend with tariff escalation, which means that greater value-added products face higher tariff rates in Japan. Such policies make it more difficult for the region to take advantage of technological progress in the agriculture sector by adding value to exports.

Manufacturing: the Motor of Japan-LAC Integration

Manufacturing perhaps best captures how economic integration between Japan and LAC has evolved over time, creating new channels for mutually beneficial exchange at each successive phase. Trade in manufacturing has been a cornerstone of the Japan-LAC relationship since the take off in bilateral commerce in the second half of the 20th century. As Figure 7 shows, manufacturing has outpaced the natural resource sector as the main driver of trade. In its initial phase, manufacturing trade between Japan and the region was almost entirely unidirectional, as LAC economies imported growing volumes of Japanese machinery and consumer goods, churned out by the country's booming industrial sector. The result, not surprisingly, was growing trade deficits that have continued to the present.

These features of Japan-LAC integration might lead some observers to worry—as many have done during the recent LAC-Asia trade boom—about the effects on domestic manufacturing in the region. It would be wrong, however, to jump to conclusions based on trade deficits alone. To begin with, the bulk of LAC's manufacturing imports from Japan consist of capital and intermediate goods, a trend that accelerated in the 1990s, when

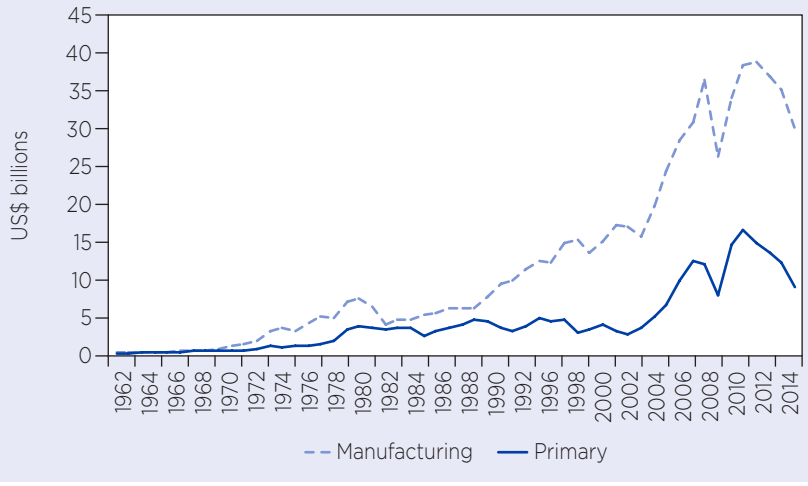


FIGURE 7/
Japan-LAC trade by sector 1962–2014

Source: IDB/INT based on UN Comtrade.

they made up 83 percent of total imports on average.[9] Thus, Japanese firms have mostly been the source of precision machinery, mechanical parts, and electronics components to drive LAC-based manufacturing.

This trend is linked to another important development in recent decades: growing Japanese manufacturing FDI in LAC. The 1990s witnessed an annual average growth rate of 35 percent in FDI inflows from Japan to LAC, with sectors such as automobiles, electronics, and food products comprising the most important growth areas. The goals of Japanese manufacturers in setting up operations in LAC were twofold: first, domestic production offered firms an opportunity to consolidate their positions in local markets, gaining closer access to and better knowledge of LAC consumers. At the same time, the region's growing network of FTAs meant that LAC-based production could increasingly serve as an export platform to third markets. Still, domestic markets remained the main target of Japanese investors in this period. A 1999 JETRO white paper reported that local sales accounted for nearly three-quarters of the total sales of Japanese affiliates in LAC.[10]

The development of manufacturing linkages between LAC and Japan nicely illustrates the complementarities and spillovers between trade and FDI. A relationship originally based on arm's-length trade in consumer and capital goods presented opportunities for deeper integration through FDI once Japanese firms gained a foothold and more familiarity with LAC markets. This FDI, in turn, opened new trade opportunities, both through backward linkages to suppliers of intermediate and capital goods and forward linkages in the form of exports to third markets. This value chain-based trade creates additional potential efficiency gains through the availability of world-class inputs to local producers, as discussed in the introductory section.

These trends have intensified in the 21st century with both trade and FDI in manufacturing experiencing a sharp uptick after 2004. The pattern of this trade and investment provides at least *prima facie* evidence for the type of interrelationships described above. For example, in the countries and sectors that have received the largest FDI flows, intermediate goods make up large shares of Japan's exports, such as transportation equipment in Mexico (55 percent) and Argentina (57 percent), and electrical machinery in Brazil (59 percent).[11]

In addition, the region's growing FDI network, which includes over two dozen LAC-Asia trade deals since 2004, means that LAC-based

[9] Based on UNCTAD classifications.

[10] Cited in ECLAC, "Foreign Investment in Latin America." 2000.

[11] Based on REITI-TID dataset from JETRO; figures are for 2014.

production has become a strategic base to serve third markets, especially the United States. Mexico in particular has consolidated its role as a key export platform for Japanese manufacturers, thanks to its extensive FTA network and proximity to the U.S.

A final factor that has encouraged manufacturing links in this most recent period has been government-to-government cooperation. An important example of such cooperation is the Japan-Mexico EPA agreement, which, as discussed below, has helped firms overcome informational constraints as well as addressing traditional trade barriers. In addition, JICA has carried out a variety of technical cooperation programs aimed at improving the efficiency of small and medium enterprises in LAC, through human resource training and adoption of Japan's renowned management practices.

Automobiles

Perhaps the best example of the diverse and dense manufacturing linkages between the economies is Japan's growing role in the region's automotive sector. Here, Mexico stands out. In the decade since the signing of the EPA, Japanese automakers have invested nearly US$ 6 billion in the country; Nissan, Toyota, and Honda all have multiple Mexican production plants. This trend is likely to accelerate in the coming years according to a recent JBIC survey of Japanese transnationals, which found Mexico to be the preferred global destination for auto sector investments in the medium term.

However, Japan's footprint in the auto sector goes well beyond Mexico. In Argentina, Toyota is currently carrying out a major expansion of its operations, involving an estimated investment of US$ 800 million. Nissan recently announced a US$ 1.2 billion expansion of its plant in Brazil's Rio de Janeiro state, which has been recognized for its innovation and sustainability, including the use of fuel-efficient "flex" engines.

Nor is Japanese investment restricted to LAC's largest economies. Increasingly, the presence of Japanese assemblers is fostering regional spillovers whereby Japanese suppliers set up operations in neighboring countries. Examples of these nascent LAC-based value chains include recent investments in Paraguay by auto parts firms such as Sumitoro, to supply Japanese auto production in Brazil. A similar dynamic can be found in Central America, where the Japanese firm Yazaki recently announced an expansion of its auto parts and harnesses operations in Nicaragua.

This investment, which foresees the creation of more than 3,000 jobs, will be the firm's fifth plant in the country. Most of the firm's production is exported, helping convert auto parts into a major source of export earnings for Nicaragua; automobile harnesses alone accounted for over half a billion dollars of exports in 2014.

Mirroring broader trends in the manufacturing sector, these investments serve the dual purposes of consolidating Japanese carmakers' presence in LAC markets while also enhancing their ability to export to third markets. On the first point, the region has emerged as a crucial source of growth for companies such as Nissan, whose LAC production accounted for 16.5 percent of its global total in 2014 (up from 12.6 percent in 2006). Beyond domestic markets, LAC-based production has been critical to automakers' global strategies. Mexico, especially since the signing of NAFTA in 1993, has been an important base to serve the large U.S. car market. But the destination of exports from Mexico has diversified to include South America, Europe, and even China. Recent numbers show that Japanese firms accounted for a full 38 percent of Mexico's auto exports in the first half of 2016, a major contribution to what has become one of the country's flagship exports and key drivers of growth. In Brazil, Japanese automakers such as Nissan have also developed important export platforms; the company exports to a half-dozen South American countries from its Brazil plants.

As discussed above, Japanese auto parts firms are also part of this equation. Japan's major Tier 1 firms—themselves often large MNCs with global operations—have followed their clients to Mexico and other LAC destinations. In addition to supplying these plants, they also export part of their production, mainly to the U.S. market. As mentioned above, some of these firms have expanded beyond the major LAC auto producers, establishing plants in neighboring countries such as Paraguay to supply Brazil-based assemblers and Central America to supply Mexican production. For these smaller economies, the presence of a large Japanese auto parts firm can provide a considerable export and employment boost.

The case of automobile production thus provides an excellent example of how trade and investment interact and encourage each other, creating increasingly dense linkages between the economies. These linkages have expanded the opportunities to benefit from economic integration, both at the country level by involving regional neighbors, as well as the firm level through business relationships between domestic firms and foreign investors.

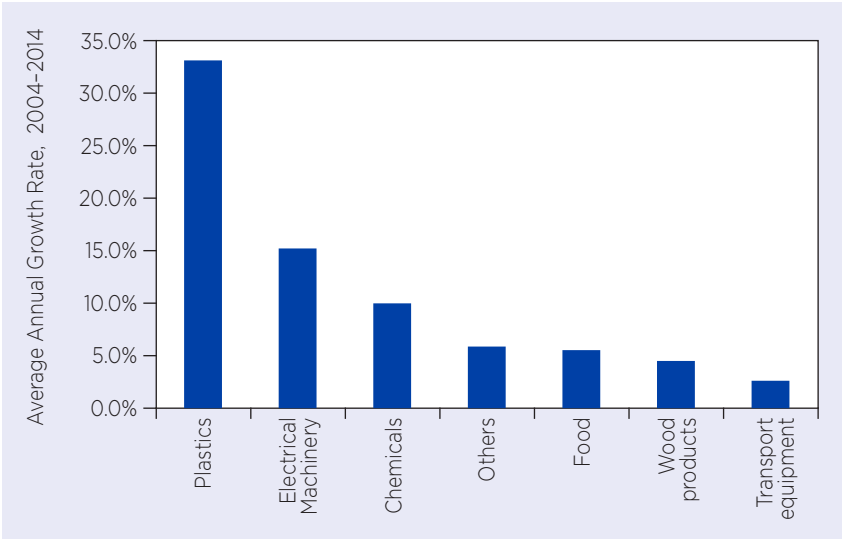
Government cooperation has also played a key role in facilitating these broader developmental dividends. In the case of Japanese auto firms in Mexico, for example, public agencies on both sides have worked together on a variety of projects aimed at helping Mexican firms become suppliers for Japanese investors. These include efforts to overcome informational barriers—the Mexico office of the Japan External Trade Organization (JETRO) maintains an extensive database of local providers with the help of Mexico's trade promotion agency, ProMéxico—and providing direct capacity building for SMEs. In 2012, JICA initiated a program, with the help of Japanese firms, to increase the productivity of potential Mexican suppliers, through training in Japan's *Kaizen* management practices. In addition to these activities, the two governments established a "Committee on the Improvement of the Business Environment" in the context of the EPA, which meets regularly to discuss issues arising in the operations of Japanese firms in Mexico, from public security to support from local governments and tax issues. This committee has helped resolve issues and fostered a positive view of Mexico's business environment in Japan, encouraging Japanese SMEs to venture into the Mexican market.

Other sectors

While automobiles have been the focus of much attention, sectors such as electronics, machinery, food products, and chemicals have likewise experienced fast growth in both trade and investment. FDI in sectors such as food (34 percent), metals (15 percent), and machinery (9 percent) makes up sizable shares of total Japanese manufacturing FDI in LAC. Some of these product groups, such as machinery and electronics, mirror trends in the auto sector, with growing investment spurring the rise of value chain-based trade.

Interestingly, several manufacturing products have also seen fast growth in LAC exports to Japan between 2004 and 2014, as Figure 8 shows. Products such as plastics (33 percent annual average growth), electrical machinery (15 percent), and chemicals (10 percent), have been driving this strong performance. This phenomenon, likely linked to the presence of Japanese investors in these sectors, reflects another synergy between FDI and trade that has the potential to continue to diversify the LAC-Japan relationship going forward. Another emerging linkage is between manufacturing and high-end services that are increasingly integrated into production processes. The next section looks more closely at service sector linkages between Japan and LAC.

FIGURE 8/
LAC manufacturing exports to Japan by product group



Source: UN Comtrade.
Note: Based on HS 2002 product groups. Others include stone and glass; textiles; footwear; hides and skins; and miscellaneous manufactures.

Services: the Next Frontier in the Japan-LAC Relationship

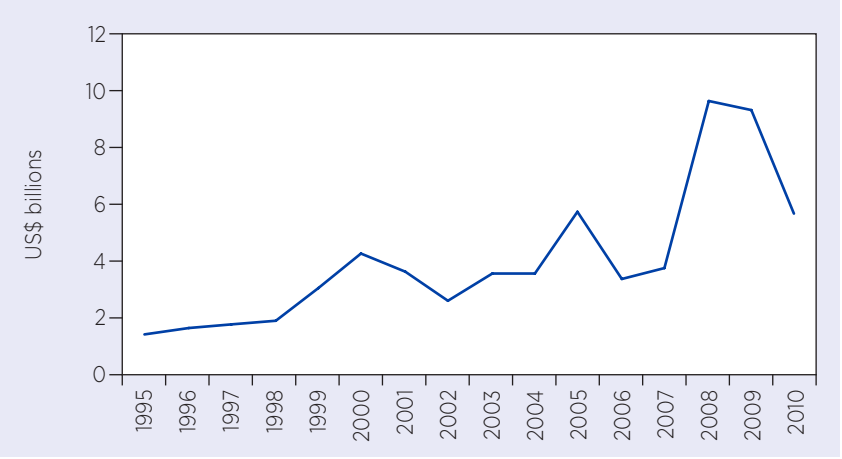
As the Japan-LAC relationship continues to grow, trade and investment in services is taking on more importance. This trend reflects broader developments in technology and global trade. Modern production processes incorporate a range of service inputs, from product design and branding to marketing and distribution. These inputs, especially "upstream" services such as product development and design represent high value-added activities that require an important component of technical skill.

As a result, governments in LAC are looking to boost the capacity to carry out these activities locally, and foreign investment can be a source of necessary capital and know-how. While MNCs have tended to locate these segments of the value chain in their home countries, this preference may be slowly changing, as evidenced by recent investments by Japanese firms in the region. In a broader sense, as services come to account for a growing share of GDP in developing economies, a natural result of becoming wealthier, foreign investors will find more opportunities in these sectors. This section looks at how these trends are shaping the Japan-LAC relationship; in doing so, it provides a lens into how the relationship may evolve moving forward.

To begin, trade in services between LAC and Japan has been growing at a considerable clip since the early 1990s, exceeding overall trade growth. While trade in services presents certain measurement challenges, Figure 9, based on World Bank estimates, clearly shows an upward (if uneven) trajectory in the first decade of the 21st century. The key sectors behind this trend are the "other business services" category, which includes financial services, business consulting, and legal and accounting services, among others, and makes up 32 percent of Japan's exports and 43 percent of LAC's. In the case of Japanese exports, royalties and licensing (22 percent) and transportation (18 percent) are also relevant.

Japanese investment in LAC service sectors has also been considerable. The service sector accounted for 34 percent of total FDI stocks in 2015—a greater share than the primary sector (22 percent). These figures reflect the diversified nature of Japanese investment, which has clearly transformed from its initial focus on natural resources, in line with the maturation of the Japan-LAC relationship. More than half of the service sector investment has been in finance and insurance, followed by transportation.

FIGURE 9/
Japan-LAC trade in services



Source: World Bank Trade in Services Database.
Note: LAC includes data from the following countries: Argentina, Brazil, Chile, Costa Rica, Colombia, Mexico, and Peru.

The measurement and classification challenges mentioned above make it difficult to extract firm conclusions from these official data. We can get a more nuanced picture of the opportunities presented in the service sector by focusing on emerging linkages in two areas: the IT/software sector and research and development (R&D).

Since the industry took off in the 1980s, Japan has consistently been a global leader in information technologies (IT) and software. Firms such as Sony, Panasonic, Toshiba, and Hitachi emerged as pioneers in the production of IT hardware and later diversified into IT services and software as that side of the business became increasingly important and profitable.

These firms and others now boast important software development and IT solutions businesses with a presence in the region. Many large Japanese conglomerates have been acquiring young, innovative software firms in order to enhance their business propositions with partners in the private and public sectors in LAC. For example, Hitachi provides business consulting, systems integration, cloud services, data storage, and telecommunications network services in Latin America through its Hitachi Data Services arm. Hitachi Data Systems has affiliates in Brazil, Argentina, and Chile, and works with clients spanning the health care, infrastructure, energy, and manufacturing sectors.

However, these large conglomerates are not the only examples of Japanese IT firms in LAC. Smaller companies specializing in software

solutions for businesses, such as Fujitsu and Japan Business Systems, have worked with Mexican auto parts firms on inventory management and energy efficiency in plants. These linkages, achieved through service exports from firms based in Japan, demonstrate the interconnectedness of manufacturing and services, with traditional manufacturing activities such as auto parts increasingly being surrounded and supported by high-end services.

Research and development is, similarly, essentially a service input to any number of business sectors: mining, agribusiness, infrastructure, and many others. As discussed above, participating in R&D activities is an increasingly important way for developing countries to add value and increase the technological component of domestic production processes.

While MNCs have tended to maintain R&D activities in their home countries, some Japanese companies have started to buck this trend in recent years. Hitachi provides a good example of how companies' research and develop arms can bring new opportunities for technological and knowledge diffusion. The firm, whose presence in the region dates to 1940, recently established an R&D center to develop technological solutions tailored to the challenges faced by the firm's diverse business activities in the region, which span medical equipment, rail infrastructure, business consulting, and solar energy, among others.

It is notable that a leading Japanese technology MNC would set up a research-dedicated facility in the region. These operations create demand for high-skilled labor in the local economy and also boost local innovation capacity, creating the potential to spur internationally competitive products developed with homegrown technology. These investment projects, while still in early stages, epitomize the aspirations that FDI contributes to dynamic development gains. If realized, R&D investments can produce economy-wide spillovers, helping countries generate the raw materials to innovate and launch new industries. However, the region still has a long way to go in establishing itself as a hub for research and development. As an illustration of this, both Panasonic and Toshiba have research centers in India and other Asian developing economies, but none in LAC. Moving forward, these are precisely the type of linkages with Japan that LAC governments should seek out. Investments in national innovation systems, domestic R&D, and human capital are a critical part of such a strategy.

Conclusions

Relations between Japan and Latin America and the Caribbean go back to the late 19th century, when the first Japanese settlers arrived in remote Amazonian outposts. From these humble beginnings the relationship has grown into a thriving commercial and diplomatic exchange. In 2015, trade stood at US$ 44 billion and US$ 4 billion of Japanese investment flowed into LAC, undergirded by a dense and growing network of trade and cooperation agreements. The protagonists in this relationship are now global MNCs, entrepreneurs, scientists and technicians, as well as a diverse range public institutions.

However, the headline numbers only tell us so much about the Japan-LAC relationship. As this report has emphasized, it is the interaction between the different "pillars" of integration—trade, FDI, migration, and cooperation—that has given the relationship its dynamism and diversity, expanding the development impacts to new sectors and regions. This evolution belies the characterization of the region's ties with Japan as another example of the "typical" LAC-Asia relationship—shorthand for unidimensional commodities-for-manufacturing trade.

While this inter-industry trade pattern is certainly also present in the case of Japan, LAC's imports have mostly been capital goods, and increasingly, industrial inputs that contribute to LAC's own domestic manufacturing. They have also led to opportunities for Japanese manufacturing FDI, which has taken off in recent years and represents the lion's share of the country's investment in LAC. The presence of these Japanese manufacturers on LAC soil in turn contributes to the productivity and exports of LAC economies—a clear trade-FDI linkage

In addition, the natural resource sector itself has also been a site for innovation and technological development—another important lesson to be drawn from this story. Rather than simply extracting resources and shipping them home, Japanese firms have used their longstanding presence in LAC's mining, agriculture, and fisheries sectors to build supporting infrastructure, expand logistics networks, and even launch new production methods based on technological and institutional innovations. Here, support from public agencies working in cooperation with LAC counterparts has been a critical part of the equation.

This report has also pointed how the good can become better. Notwithstanding their many achievements, governments on both sides can do more to deepen integration. Important trade barriers in the form of tariff escalation and burdensome sanitary and phytosanitary regulations still exist. And cooperation in areas such as air services agreements would help improve transportation links between the far-flung regions. While not a trade policy issue as such, more public investment in LAC to develop R&D capabilities would help encourage more private sector investments from Japanese MNCs. LAC firms, too, could take inspiration from their Japanese counterparts and make greater incursions in the Japanese market. LAC FDI in Japan has, to date, failed to materialize.

The past century of progressive integration has yielded important and at times unexpected benefits for both Japan and LAC. Taking the necessary steps to deepen this relationship will surely bring about additional gains. At a time of global economic headwinds, governments on both sides of the Pacific can ill afford to let these opportunities slip away.

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