

Rising concentration in Asia-Latin American value chains

Can small firms turn the tide?

OSVALDO ROSALES
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Editors

Economic Development



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Oswaldo Rosales

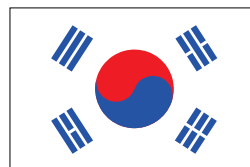
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Foreword

Despite the stagnation of total export growth in Latin America over the past few years, trade with Asia has continued to grow. From 2000 to 2013, the share of Asia in total Latin American exports increased from 6% to 20%, making Asia the region's second largest trade partner. In contrast, the share of the United States fell from 59% to 41%, and sales to the European Union and to the region itself have actually fallen. However, Latin American exports to Asia are highly concentrated, consisting mainly of a limited number of commodities sold by a few, mostly large companies. The involvement of such a small number of actors in total Latin American exports may further increase the already high concentration of export revenues observed in the region. In this context, what options are there to counter this trend by encouraging higher direct or indirect participation by small and medium-sized enterprises (SMEs) in exports?

The region's SMEs have found it hard to export directly to Asia owing to geographical distance, cultural differences and their lack of competitiveness. Evidence presented in this book, on economies in Central and South America, shows that only 11% of total SME exports went to Asia in 2011, versus almost one third of total exports by large firms. In comparison with SMEs that sold to other markets, those that exported to Asia sold fewer products to fewer destinations and recorded higher rotation rates. However, the number of Latin American SMEs entering the Asian market exceeded the number of firms leaving, causing the number of SMEs exporting to this region to increase over the last few years, but this trend is still fragile.

A more accessible route for SMEs has been to export indirectly to Asia by participating in value chains led by trans-Latin companies and Latin American subsidiaries of Asian firms that sell products or services to Asia. As in any other global value chain (GVC), the participation of SMEs is conditional on meeting quality, delivery and technology standards imposed by the multinational firms. Moreover, SMEs need an understanding of the specific characteristics of the Asian markets, and they must adopt targeted management and marketing strategies. This raises many questions. What conditions are imposed on SMEs to participate in these value chains? What are the competitive advantages and disadvantages of SMEs in Latin America that constrain their participation in GVCs governed by multinational firms? Do multinational firms and public institutions provide pertinent technical and financial assistance to SME suppliers? Is the integration of SMEs into these value chains fostered by public and private policies?

These questions are addressed in this book through four case studies that look into the role of SMEs in Asian-Latin American value chains dominated by multinational firms. A first case study looks at Argentine multinational firms with investments in Asia. These firms have helped selected SMEs for many years become competent suppliers of inputs, raw materials and services, while keeping turnover ratios generally low. A second case study focuses on the role of Chilean SMEs in the supplier networks of a Japanese firm in the fisheries sector and a Korean firm in the forestry sector. The latter company promoted links with SMEs through a supplier development programme aimed at sustainable forest exploitation. A third example is a Korean firm in the automobile sector in Brazil that sources parts and components from local firms that are either Brazilian or subsidiaries of foreign companies, but none are SMEs. The same holds true for a fourth case study on Korean textile firms in Guatemala that source most materials from outside the country. In sum, there seems to be large potential for increasing the role of SMEs as suppliers of multinational firms exporting to Asia.

Public and private supplier development programmes (SDPs) are one instrument that can help to increase SME linkages with multinational firms. These programmes can upgrade SMEs and ensure their successful participation in more inclusive and sustainable value chains. A contribution to this book by the United Nations Conference on Trade and Development (UNCTAD) synthesizes its experience with SDPs in Argentina, Brazil and Mexico in sectors such as agribusiness, construction, manufacturing, mining, and services and tourism. SDPs from other countries are also discussed, including Costa Rica and El Salvador and three countries in Asia (Indonesia, Malaysia and Thailand).

A comparison of the SDPs reveals differences that reflect each country's individual assets and viable sectors. However, the objectives and operating principles are similar: they should be market-driven, with a critical mass of both buyers and suppliers; they should focus on upgrading SMEs to create long-term production linkages; they require a long-term commitment from all participants, as benefits are not instantaneous; they need to change over time and adapt to local conditions and development needs; and they should include a comprehensive range of services to assist SMEs.

In broader terms, there is a need for governments in Latin America to create an environment that encourages multinational firms to invest, upgrade, innovate and forge business linkages with SMEs. SDPs have the potential to make the integration of developing country SMEs into global value chains a reality. As such, the issues addressed in this volume provide a valuable contribution to the work agenda of Latin American governments and the Economic Commission for Latin America and the Caribbean, which focuses on formulating policies that promote the capabilities of small firms and narrow their performance gap with larger companies as a means to reduce productivity differentials and income inequality.

Alicia Bárcena

Executive Secretary

Economic Commission for Latin America
and the Caribbean (ECLAC)

Introduction

Trade and, to a lesser extent, foreign direct investment (FDI) have been increasing at staggering rates between Asia and Latin America since the beginning of the twenty-first century. However, the region's booming exports to Asia are concentrated on a few commodities, whereas its imports consist mainly of medium- and high-technology manufactures. As a result, the region displays an overall growing trade deficit with Asia. This is mostly explained by a rising deficit in the trade in manufactures, which is not being compensated by a growing surplus in commodity trade. The region's sales to the Asian region are also dominated by a few large firms. This export concentration in terms of products and firms has increased over the past decade and is expected to continue. With Asia being the most dynamic trading partner of Latin America, the above trends have a growing impact on the overall economic and social structure of the region. The growing concentration of total export earnings could not only have a negative impact on income distribution, but also increase the volatility of these earnings and reduce productivity growth in the export sector. Both trends could, in turn, affect overall economic growth and stability.

This book investigates the possibilities for slowing down or turning the tide of the above trends. One approach is to diversify the regional export base in terms of increasing the number of actors, in particular, small and medium-sized enterprises (SMEs). These SMEs can help strengthen this base either by exporting directly or by participating in the supplier networks of multinational corporations (MNCs), which dominate

the biregional value chains that carry out most of this trade. The MNCs operating in the region include companies that are headquartered in Latin America, Asia and other regions.

Increasing the participation of SMEs in global value chains (GVCs) in developing economies is an opportunity to improve productivity and create employment. According to United Nations Conference on Trade and Development (UNCTAD) *World Investment Report 2013. Global Value Chains: Investment and Trade for Development*, more than 80% of global trade is linked to the international production networks of MNCs. GVCs therefore form an almost unyielding nexus between trade and investment. In practice, however, the participation of SMEs in GVCs is constrained by major challenges in terms of accessing finance, obtaining quality standard certifications and upgrading technology.

The research of this book on the current and future role of SMEs in GVCs between Asia and Latin America is organized in three parts. The first part reviews recent trends in trade and direct investment between the two regions. Part two of the book looks into the current participation of SMEs in GVCs as either direct exporters or suppliers for multinational firms that trade between the two regions. The latter phenomenon is documented through several case studies, as no statistics are available. In part three of the book, a number of public-private initiatives are reviewed that aim to increase the presence of SMEs in the supplier base of multinational firms.

Part I: Broad trends in biregional trade and direct investment

The first chapter by Andrew Berry and Keiji Inoue reviews recent trends in trade and direct investment between Asia and Latin America. The authors describe the evolution of trade relations since 2000 in terms of the growth of these flows, their content, the country distribution, and the number of trade agreements. Their analysis of FDI flows from Latin America and the Caribbean and Asia allows for a greater understanding of the stocks of inward and outward direct investment in each region from 2001 to 2012.

Trade and direct investment ties between Latin America and the Caribbean and Asia have continued to grow after the financial crisis of 2008. In 2013, the total value of bilateral trade amounted to US\$ 522 billion, versus US\$ 74 billion at the start of the century. In just over a decade, Latin America has seen the share of Asia in total exports increase from 6% to 21%, while the share of the United States fell from 59% to 41%. The dramatic growth in trade between the two regions can mostly be attributed to the rise of China, which has become the world's manufacturing powerhouse.

China now accounts for 54% of all imports from Asia to Latin America and the Caribbean and 49% of all exports to Asia. Overall, China has become a key market for Latin American and Caribbean exports, increasing its share from 1% to 10% from 2000 to 2013, and it is on track to overtake the European Union as the region's third largest export market after the United States and the region itself.

Berry and Inoue find that the vast majority of exports (94%) from South America to Asia between 2012 and 2013 were either commodities or natural-resource-based manufactures. In comparison, these goods accounted for 57% of total exports from Mexico and 53% from the Caribbean. Central America is the only subregion that exported more medium- and high-technology products (52%) than commodities or natural-resource-based manufactures. With regard to imports from Asia, Mexico had the largest share of medium- and high-technology manufactures, amounting to 81% of its total imports. In South America, Central America and the Caribbean, imports of medium- and high-technology products accounted for lower shares (65%, 60% and 57%, respectively).

Although biregional trade has been rising fast between the two regions, the chapter draws attention to the increasing trade imbalances. Mexico alone accounted for 85% of the total Latin American and Caribbean deficit with China in 2013. Mexico's high demand for finished goods is significantly outweighed by the country's exports to Asia (predominantly China).

The top three Asian trading partners with Latin America and the Caribbean are China, Japan and the Republic of Korea. From 2000 to 2013, these three countries maintained their positions as the region's top three origin countries of imports, with China's share growing substantially. At the beginning of the century, Japan represented 32% of the region's imports followed by China (20%) and the Republic of Korea (16%). By 2013, China had increased its share to 54%, while Japan and the Republic of Korea fell to 12% and 11%, respectively. With regard to exports, Japan was the largest exporter to the region in 2000 with a share of 34%, followed by China (22%) and the Republic of Korea (12%). By 2013, China had again taken the majority share (49%), while Japan (11%) and the Republic of Korea (7%) saw their shares decline.

The analysis of FDI flows between the two regions reveals that Asian firms invested greater amounts into the Latin American and Caribbean region than vice versa. Of all FDI inflows into Asia, Latin America and the Caribbean accounted for only 0.13% from 2001 to 2006, dropping by 0.1% from 2007 to 2012 (excluding financial offshore centres in the Caribbean). In contrast, Asia contributed 2.0% of the total FDI

inflows to Latin America and the Caribbean during 2001-2006, increasing to 5.6% between 2007 and 2012. In 2012, Asia invested US\$ 9 billion in Latin America and the Caribbean, whereas in the other direction Latin America and the Caribbean invested only US\$ 75 million, according to bilateral FDI statistics from the United Nations Conference on Trade and Development (UNCTAD).

The top three FDI countries from Asia to Latin America and the Caribbean in the first period (2001-2006) were Japan, Australia and the Republic of Korea, respectively. Between 2007 and 2012, Japan was still the largest investor, representing around US\$ 27 billion during the period, followed by China with around US\$ 7.5 billion and Australia with around US\$ 4 billion. The main receivers of Asian FDI to Latin America and the Caribbean in order of investment size from 2001 to 2006 were Brazil, Mexico and Panama. In the second period, Brazil remained the top receiving country, with Mexico in second place and Chile overtaking Panama to become the third largest receiver.

The chapter shows that both regions are intensifying their trade and investment ties, which offers both opportunities and challenges for Latin America and the Caribbean. In particular, if the region continues on the current path, it may further increase its trade deficit with Asia and its dependence on a few raw and processed commodity exports. It is therefore essential that Latin America and the Caribbean prioritize the diversification of its export basket and the incorporation of more value added into their exports. Greater efforts are also required to insert SMEs into the global value chains of both Asian and Latin American firms.

Part II: The participation of SMEs in exports and biregional value chains

Chapter II by Antonio Martner, Nanno Mulder and Roberto Urmeneta sheds light on the behaviour of Latin American firms in terms of exports to Asia, with specific emphasis on the role of SMEs. The authors analysed aggregate data from 14 Latin American countries and then conducted a more in-depth analysis using microdata from customs agencies for the following seven countries: the Plurinational State of Bolivia, Chile, Costa Rica, Ecuador, El Salvador, Guatemala and Uruguay. They also incorporated customs data from Mexico for 2007 to 2011 to provide a wider Latin American perspective.

The analysis reveals that less than 1% of all Latin American firms exported in 2012, while the share of SMEs that exported was even smaller. In comparison, the share of Asian SMEs participating in exports was between

10 and 30 times larger. Half of all SMEs exported only one product to one destination in Asia, which highlights the vulnerability of SME exporters to Asia. It also explains the high turnover of SME exporters to Asia in comparison with larger firms exporting to the same region. The shares of SMEs that entered and exited the Asian export market between 2007 and 2012 were higher than to any other region around the world. Nevertheless, as the share of Latin American SMEs entering the Asian market each year (50%) is greater than those leaving (40%), the number of SMEs entering this market increased over time. The case studies also revealed that the extensive margin (that is, the entry or exit of exporting firms) was much more significant for SMEs exporting to Asia than for large firms.

Evidence provided by case studies highlights the importance of promotion agencies in helping new SMEs gain access to economic support and knowledge and facilitating foreign exports. The challenges facing SMEs exporting to Asia include the large distance between the two regions (resulting in high transportation costs), lack of knowledge, cultural and language barriers and complex customs procedures. Moreover, natural-resource-based products and agricultural products incur higher tariffs, which affect Latin America in particular.

Although there are many challenges, Latin American firms should prioritize exporting to Asia because of the region's rapid growth and demand potential. Latin American governments can assist local businesses by applying policies that improve bilateral trade between the two regions and encourage export diversification and SME participation. Achieving this requires a joint effort between the public and private sectors. Efforts should also be made to increase business linkages between Latin American SMEs and trans-Latins (see below). These efforts would help improve SMEs' capacity, productivity, knowledge and adoption of quality standards that will enable them to compete in international trade.

The following three chapters deal with the indirect participation of SMEs in the biregional value chains. As no aggregate data is available, the only way to analyse this indirect participation is through case studies on the presence of SMEs in the supplier networks of MNCs that conduct trade between the two regions. Case studies are presented on the role of SMEs in the supplier networks of Korean and Japanese MNCs in Chile, Brazil, Guatemala and the Republic of Korea, as well as Argentine MNCs that have operations in Asia.

Chapter III by Hyuk Ju Kwon presents two case studies on Asian MNCs operating in Chile's natural resources sector, with a focus on these firms' links with SME suppliers. Moreover, it discusses a supplier development programme that aims to promote these business linkages. Asian FDI in Chile has been largely motivated by the latter's abundant

natural resources (in particular copper, fisheries and forestry) and economic stability. Asia's share in total FDI inflows to Chile grew significantly from 3% in the early 1990s to 20% in 2012.

This chapter presents the cases of KIMICA Chile Ltda., a Japanese affiliate established in Chile in 1987, and Eagon Lautaro S.A., which entered the country in 1993 with investment from the Republic of Korea. These two companies sought access to Chile's abundant resources of seaweed and forests, respectively. These companies process the raw materials into globally competitive products, which are not only sold to their home country, but also exported to other markets.

One of the potential benefits of MNCs in Chile is their transfer of knowledge and technology to SMEs through backward or forward linkages. SMEs represent 99% of all firms in the country and 80% of total employment. However, the establishment of production linkages between MNCs and SMEs can be challenging, given that the latter companies are characterized by low productivity and capacity deriving from their lack of access to modern technology, quality certifications and credit.

Both companies include SMEs in their supplier base. At KIMICA, the upstream value chain starts with many small companies and individuals (called *algueros* in Spanish) that collect seaweed along the coastline of Chile and then sell it to two subsidiaries of KIMICA in Chile (M2 and Algas Vallenar). KIMICA has built a sustainable relationship with the *algueros* in part through the payment of fixed prices for their products, which provides stability to these small firms. KIMICA also holds regular meetings with its suppliers to ensure the quality of its inputs.

Eagon Lautaro aimed to increase the share of SMEs in its supplier base through a supplier development programme (SDP) with financial support from the Chilean Economic Development Agency (CORFO). The programme mainly helps existing and potential SME suppliers to comply with the Forest Stewardship Council (FSC) certification. Eagon managers in charge of the SDP conduct regular training sessions and visit the suppliers periodically. They educate the suppliers on how to seed the forest, manage the trees until maturity, contain diseases, and cut down the trees according to FSC standards. There are currently 22 SMEs participating in the programme. So far, three SME suppliers have succeeded in acquiring FSC certification.

The CORFO SDP aims to bridge gaps between the SME supplier's capacity and the large firm buyer's requirement in certain products and services through cooperation between the two parties. This is done through capacity-building activities organized by the buyer companies, together with supplementary specialized services, professional advice,

training, technical assistance and technology transfer. This programme started in 1998 and has focused mainly on primary sectors such as agriculture, forestry and mining. After the number of participating firms in the programme grew steadily up to 2008, these numbers declined as a consequence of the programme's budget cuts, which were mainly due to a change in policy priorities.

Two external evaluations in 2011 found that the SDP benefited both SME suppliers and large buyers, which supported the hypothesis that cooperation is positive for both large firms and SMEs. In the case of buyer firms, the programme boosted sales and increased the probability of firms becoming exporters. The SMEs that participated in the SDP tended to survive longer, have higher sales and register an increase in employment and wages.

Nonetheless, these evaluations, together with an internal review by CORFO, also identified several challenges of the programme. These include the concentration of projects in traditional sectors (agriculture and mining) with a low degree of complexity; inadequate performance indicators that mainly focus on production and turnover of suppliers; a focus on suppliers already involved in the chain; and insufficient transfer of technical skills to SME providers.

In 2015, CORFO is reorienting its SDP to be more complex, dynamic and based in non-traditional value chains. This shift in focus consists of the generation of social capital between large companies and SMEs, development of suppliers of more complex products and services, development of new providers to be incorporated into high value added production chains linked to territories and the incorporation of more complex selection requirements. CORFO also strives to increase the export intensity of the value chains it supports through a collaboration with the national export promotion agency, PROCHILE.

In chapter IV, Jae Sung Kwak reviews local suppliers to Korean multinational companies in the automobile sector in Brazil and the textile and clothing sector in Guatemala. With increased FDI from Asian MNCs to Latin America, there is growing debate on their contribution to the creation of backward linkages and technology spillovers. To contribute to this debate, this chapter investigates the linkages between some Korean MNCs based in Latin America and large and small local suppliers. This field-based research consists of interviews with the Korean auto manufacturing firm (Hyundai Motors Brazil (HMB)) in Brazil and three Korean textile firms (Hansae, INT Trading and Sae-A) in Guatemala. The initial hypothesis of the research was that all Korean firms operating in both countries have developed some backward linkages with local domestic SME suppliers.

Hyundai was the first Korean automobile producer to move to Brazil when it created HMB with an investment of US\$ 600 million, which initiated production in 2012. Hyundai has been successful in achieving a smooth supply chain by replicating the same supply base as their manufacturing plant in the Republic of Korea, as well as by creating two subsidiaries. All first-tier suppliers to HMB are Korean firms who have created supply bases in the vicinity of the HMB manufacturing plant in Brazil. This strategy ensures a smooth supply, as existing suppliers understand the requirements and demands of Hyundai, which in turn ensures reliability and further strengthens business relationships.

Owing to fierce competition in the global car market, some first- and second-tier companies have been more active in investing in local firms in order to meet the supply requirements of HMB. However the majority of participants in the supply chain are large firms, leaving few opportunities for local SMEs to enter. Overall, the case study shows that HMB has made little effort to directly engage with Brazilian SME suppliers. This stands in stark contrast to their sister company in the Republic of Korea, which has supported more than 2,500 local SME suppliers, with investments of around US\$ 600 million a year on SME initiatives.

The second set of case studies is on the supply chains of Korean apparel manufacturers based in Guatemala. In 2011, Guatemala was the Republic of Korea's fourth largest textile investment destination, with Korean firms owning 120 out of a total of 200 clothing factories. Many Korean textile firms began investing in the country in 1995, to benefit from opportunities created by trade agreements between Central America and the United States. Another argument in favour of investing in Latin America was to safeguard against supply shortages: if one region faces supply problems, the companies can increase their buying in the other region. However, all supply chains led by Korean firms are operated within Korean business circles, such that most of the upward and downward segments in the value chain are Korean-owned. Interviews with INT Trading and Hansae Guatemala revealed that both companies use Korean subcontractors, as local domestic production capacity is insufficient to meet supply chain requirements. There are also concerns over poor safety records and the creditworthiness of local firms.

Instead of finding the presence of backward linkages as expected, the research uncovered an enclave economy in both countries, where the majority of suppliers were international firms. In the case of Brazil, the first-tier supplier of HMB, Hanil, has begun making connections with local suppliers, which is predicted to continue. In Guatemala, some local backward linkages have been created, but the textile sector continues to be dominated by Korean firms operating in expatriate circles.

According to MNCs, the lack of business linkages with local domestic firms is attributable to the deficiency of any serious offers by the latter and their limited capacity to substitute imported suppliers. All the Korean MNCs interviewed stated that they use pre-established global suppliers with which they have already developed relationships. Moreover, this operational structure requires little participation from domestic suppliers.

In both case studies, the industries lack business linkage initiatives to provide sufficient support to local SMEs. In the absence of government initiatives, especially industrial policies to promote linkages between local SMEs and large investors, it is unlikely that business linkages will emerge spontaneously. More precisely, the role of the government should focus on building the capacity of start-ups to establish effective business relationships with Korean and other foreign investors.

Chapter V by Andrés López and Daniela Ramos reviews the presence of Latin American SMEs in the supplier networks of four Argentine MNCs that have operations in Asia: namely, Tenaris (steel), IMPSA (metallurgy), Arcor (foodstuffs) and Biogénesis Bagó (pharmaceuticals). Their research aims to assess the conditions imposed on SMEs who participate in trans-Latin value chains. They also address the existence of technical and financial assistance to SMEs by trans-Latins and the government.

Multinational firms in Latin America are much less internationalized than their Asian peers. Moreover, the activities of trans-Latins tend to be mainly horizontal. They invest abroad mainly to diversify country risk or access new markets in which to sell their products. Their international investments are predominantly in Latin America and, to a lesser extent, Europe. Their presence in Asia is still scarce. However, an increasing number of firms from Argentina, Brazil, Chile, Colombia, Mexico and Peru have productive and commercial investments in China and some other Asian countries. Most of these companies are leaders in their respective business sectors back home.

All four of the firms interviewed had implemented supplier development policies for several years. They have been able to find competent SME suppliers of raw materials and services in Argentina and other Latin American countries, which have helped to keep turnover ratios generally low. The presence of foreign suppliers is higher in the area of capital goods since local provision is often not available, especially when complex technical equipment is required.

As they deepened their internationalization processes, these four trans-Latins had to adapt to the different legal and business requirements of each market where they started to operate. Meeting these requirements often

required technological and productive changes, which had to be passed on to their suppliers. Trans-Latins often help their suppliers implement these changes, as has been the case of operations in Asian markets.

However, when Argentine trans-Latins have manufacturing plants in Asia, local firms in the host countries supply the bulk of inputs and services. Argentine SME suppliers cannot compete with their Asian counterparts, and it seems to be almost impossible for SMEs to engage in independent business operations in that region.

Chapter VI by Si-un Yi examines the participation of Korean SMEs in two export clusters led by Korean MNCs that export a significant share of their production to Latin America. These clusters are Samsung Display in the electronics sector and Boryung Pharmaceutical Company in the pharmaceuticals sector.

The case study on Samsung Display reviews the company's investment in backward linkages with local domestic SMEs. As one of the largest display panel producers in the world, the company needs to maintain a stable supply of quality components, which it has achieved by implementing a strategy for upgrading its SME suppliers through financial and technical assistance. The strategy, called the Creative Partnership Programme (CrePas), was introduced in 2009. The programme guarantees the purchase of a company's products once the SME has achieved the required standard. It also provides up to US\$ 1 million in research and development (R&D) support. The programme allows Samsung Display to reduce its dependency on imported components while maintaining its price competitiveness. Between 2009 and 2013, Samsung Display invested a total of US\$ 15 million in assisting 42 SME suppliers that took part in the programme.

The case study of Samsung Display also explores how the Korean government is supporting SMEs in the display panel industry. The Ministry of Trade, Industry and Energy supports R&D capacity-building for SME component manufacturers through the Material and Component Technology Plan introduced in 2012, which aims to reduce the dependency on imported parts and materials from 2013 to 2016. In 2014, the government created a Display Shared Growth and Cooperation Committee, which integrates members from government, MNCs and SMEs. This Committee promotes SME participation in the display panel industry. The government further supports the overall competitiveness of SMEs through the Technical Support Centre for Touch Panel Industry in Daegu. This centre helps SMEs to better plan their manufacturing process, including product design, certification, pilot production and marketing.

The second case study in this chapter focuses on the pharmaceutical industry. The Korean government has promoted the international expansion of this industry through multiple free trade agreements and the implementation of Pharma 2020, a project that aims to significantly increase the country's exports between 2011 and 2020. The government is also supporting the participation of SMEs in pharmaceutical value chains through business fairs where buyers are invited to create business linkages with Korean SMEs and large firms. These fairs allow Korean SMEs to find trading partners and establish contacts with international firms.

The government's Medistar Initiative, implemented through the Korea Trade-Investment Promotion Agency (KOTRA), provides global partnering, marketing and other services to SME exporters. This initiative assisted Boryung Pharmaceuticals in finding local partners to market its products in Latin America, as the company was facing difficulties in competing with local traditional brands. The Korean government has also helped reduce institutional barriers for SMEs to export to Latin America, through efforts such as the co-financing of approval procedures for domestic companies in foreign countries by the Korea Health Industry Development Institute (KHIDI).

In both industries, the interviewed SMEs emphasize that their large clients guarantee a stable demand for their products, improve the trust of potential new clients and sometimes transfer knowledge and skills. However, the dependency on a few large clients poses risks in terms of limited negotiating power and the probability of becoming isolated if their buyers switch suppliers. Competition with other SMEs is intense, and there is pressure to lower prices in order to remain competitive and win contracts.

The two case studies show interesting differences between the two value chains in terms of government initiatives and the participation of SMEs. In the global display panel industry, the Korean government and the multinational companies LG and Samsung Display play a predominant role. Samsung Display has dozens of SME suppliers, whose participation in the value chain is stimulated by Samsung Display's open innovation strategy and public initiatives that improve the capabilities of small firms. In contrast, the Republic of Korea's participation in the global pharmaceutical value chain is still relatively small. Few SMEs participate in this value chain due to its high capital intensity. The majority of SMEs supply ingredients, which do not require expensive investments in R&D. The government has supported pharmaceutical SMEs by providing assistance with marketing and enabling linkage creation in overseas markets.

Part III: Increasing the role of SMEs through supplier development programmes

Part III provides examples of public-private schemes in Asia and Latin America that are designed to increase the capacity and output of SMEs in order to meet the standards and requirements of international buyers.

Many emerging economies promote the integration of their SMEs in the production networks of MNCs so that they can benefit from technological upgrading and industrialization. Because of the large productivity gap between large and small firms, it is difficult for SMEs to plug into such networks. Government intervention is therefore necessary to improve the performance of SMEs.

In chapter VII, Kriengkrai Techakanont reviews supplier development programmes (SDPs) in the automobile industries in Indonesia, Malaysia and Thailand. These programmes assist SMEs in becoming better suppliers to car producers. The three countries have several commonalities: they have the largest car industries among the countries of the Association of Southeast Asian Nations (ASEAN); they have implemented similar industrial policies since the 1950s; and Japanese firms played an instrumental role in these programmes, while public institutions performed a supportive function in nurturing local SMEs. The research was conducted through desk-based and field-based research in order to gain a full understanding of the three different country programmes, namely, Dharma Bhakti Astra Foundation (YDBA) in Indonesia, Malaysia Japan Automotive Industries Cooperation (MAJAICO) in Malaysia and Automotive Human Resource Development Project (AHRDP) in Thailand.

In Indonesia, the largest national first-tier auto-parts manufacturer (Dharma Bhakti) Astra and its foundation (YDBA) spearheaded a national SME development programme. The programme was founded in 1980 with the aim of improving the quality, costs, delivery and innovation capacity of its suppliers. In 2014, the programme's budget reached US\$ 460,000. The programme is subsidized through a number of sources and requires participants to pay one fifth of the actual cost of their participation. Both existing and potential suppliers can join the programme.

The Malaysia Japan Automotive Industries Cooperation (MAJAICO) was a public-private programme between the Korean and Japanese governments and the private sector. It was set up in 2006 and ran for five years. The aim of the programme was to upgrade the capacities of 150 domestic suppliers so that they could become international exporters. The third case study focuses on the largest public-private supplier development programme in Thailand, called the Thailand Automotive

Human Resource Development Project (AHRDP), which ran from 2006 to 2010. The programme was strongly supported by four Japanese firms and the Japanese government, with the aim of developing the human resources of Thai-owned first- and second-tier suppliers.

In Indonesia, the SDP was mainly driven by the private sector, where the Astra Group was the key initiator. The strength of the YDBA programme was its direct assistance to SMEs across several industries, including the automotive sector. Astra's training and mentoring system contributed to productivity improvements, cost reductions and business expansion. The SDPs implemented in Malaysia and Thailand, in contrast, were the fruit of public-private partnerships under the Economic Partnership Agreements with Japan. Multiple public and private Japanese organizations coordinated and provided technical support in these two countries through their automotive institutes, which, in turn, coordinated actions with local SMEs.

This chapter finds that both the Malaysian SDP (MAJAICO) and the Thai SDP (AHRDP) were more successful than the one implemented in Indonesia. This is explained, in part, by the extension of these programmes after the initial five years. Both countries focused on particular initiatives within their SDP: the lean production system (LPS) in Malaysia and the Toyota Production System (TPS) in Thailand. These specific initiatives played a key role in upgrading management technology and improving productivity among suppliers. Over time, greater support for technological content was increased and focused on higher value added activities, such as research and development and testing capabilities.

The SDPs in all three countries suffered from a lack of awareness and participation on the part of the SMEs. To enhance their impact, these programmes should be promoted using more effective advertising methods in order to attract sufficient interest from SMEs. Technical support should focus on higher value added activities, such as mould and die manufacturing capabilities, preparation of mass production, R&D, testing and value analysis. These skills are essential for companies that supply parts to global automobile manufacturers.

Chapter VIII by Andrew Berry and Fulvia Farrinelli provides an overview of SDPs in Argentina, Brazil and Mexico. In the first two countries, the SDPs were designed by United Nations Conference on Trade and Development (UNCTAD). UNCTAD business linkage programmes are designed to upgrade and increase the capacity of SMEs by generating linkages between MNCs and SMEs.

UNCTAD runs multi-stakeholder programmes that include relevant government departments or agencies, SMEs, MNCs, business associations,

business services providers and financial institutions. They have been implemented in 12 countries in very diverse sectors, including agribusiness, construction, manufacturing, mining and services and tourism. Recently, the programmes have also addressed the issue of inclusiveness and sustainability in value chains more systematically, and they have focused their efforts to promote business linkages in subsectors such as sustainable tourism and green construction.

This chapter illustrates the potential of business linkage programmes for successfully upgrading SMEs and ensuring their participation in inclusive and sustainable value chains. The case studies show that business programmes vary widely depending on a country's individual assets and viable sectors. However, the objectives and operating principles are similar. Business linkages have to be market-driven, with a critical mass of both buyers and suppliers, in order for a sustainable programme to take root in a country. Business development programmes should focus on upgrading SMEs to create long-term productive linkages. Entrepreneurship development, such as that provided by UNCTAD via the EMPRETEC programme, has created a culture of change and a positive mindset for local suppliers, thereby helping to improve their skills, motivation and attitude towards work. Cluster development, supply chain mapping and networking of firms can also facilitate the development of linkages with a larger group of firms, generating economies of scale and an effective impact.

The development of successful business linkages requires a long-term operational and policy perspective. Policies to force MNCs to join linkage programmes are counterproductive and usually only achieve short-term gains. Instead, a systemic policy approach to linkage-building is necessary. This includes strategic FDI attraction and the strengthening of the absorptive capacities and competitiveness of domestic enterprises. Improving the general investment environment is also important. The regulatory and institutional environment in which firms operate affects their ability to initiate productivity improvements, through the optimal allocations of inputs, technology transfers and the ability to generate spillovers. Finally, it is necessary to raise awareness and improve dialogue among different stakeholders at both the national and local levels, including municipalities and private-sector stakeholders.

The first case study in this chapter investigates the UNCTAD-led programme in Argentina. This programme was the first supplier development programme to be conducted by UNCTAD and it focused on the automobile and dairy sectors. The automobile sector looked the most promising, as 90% of the car parts producers were SMEs. The programme succeeded in increasing the sales and investments of 70% of the SMEs that participated in the programme, while 60% hired more workers and 90%

improved planning and purchasing agreements with their MNC buyers. The positive outcomes of the Argentine business linkage programme illustrate the need for a critical mass of companies on both the supplier and the buyer sides. Another condition is the long-term commitment of all participants, since results are not normally seen in the short term. Consequently, a strict selection process of both SMEs and MNCs is needed when implementing a linkage programme. The relative success can also be attributed to the initial pilot phase and the development of an adequate institutional framework encompassing sectoral chambers and associations, the buy-in of MNCs at the highest level and the adoption of a clear communication strategy to build trust among key project stakeholders.

The second case study looks at the Brazilian business linkage programme, which was developed in 2005. The programme was coordinated between the Brazilian government, UNCTAD, the German Agency for International Cooperation (GIZ) and multiple domestic public and private partners, with the aim of identifying business linkage opportunities and constraints between MNCs and SMEs. The project was successful in developing activities at the company, institutional and government level, which benefited both SMEs and MNCs. A total of 130 SMEs and 2,500 employees took part in the programme. The participating SMEs increased their client base; expanded sales and/or exports; improved access to information, technical advice, technology and management processes, product standards and managerial skills; enhanced competitiveness; and received coaching and technical advice. After the programme, MNCs were able to strengthen their local supplier networks, giving SMEs an opportunity to gain a foothold in GVCs. The experience of Brazil shows that a business linkage programme needs to change over time and adapt to local conditions and development needs. Linkage programmes should be designed to strengthen the absorptive capacities of domestic enterprises, and they should evolve dynamically to incorporate higher value added products and services and provide a launching pad for the internationalization of SMEs. It is necessary to include MNCs in the selection process of their suppliers in order to ensure beneficial outcomes for all. The Brazil case also shows that a classical linkage programme supporting local SMEs can be adapted to a more complex programme that also addresses aspects of value chain mapping and cluster development. Both aspects can enhance the effectiveness of linkage promotion programmes.

The third case study investigates two SDP programmes implemented in Mexico that aimed to develop an integrated supply chain connecting local SMEs with foreign MNCs in the electronics and automotive sectors. The first programme publicized ideas and information regarding grants, industry incentives, quality of infrastructure, the business industry and investments. It also organized media events and exhibitions that helped

to attract new investment and promote the local electronics cluster. This project was successful in establishing a database of domestic electronics suppliers. Through increased funding, it was able to further support a greater number of suppliers. The second programme, in the automotive sector, promoted local supplier development by demanding that Volkswagen's first-tier foreign suppliers develop linkages with domestic firms right from the start of production in 1962. This programme was successful because it forced first-tier foreign suppliers to train and upgrade local suppliers. The Mexican example illustrates that the development of business linkages between MNCs and SMEs depends on a comprehensive range of services. These include advice on contractual arrangements, assistance to small firms in preparing business proposals, the creation of strategic alliances with firms, help with special development projects and the organization of joint bids. Cooperation between institutions and funding schemes is indispensable for effectively helping SMEs acquire new skills and upgrade their technology. When support is lacking at the national level, it is important to focus on the state or even regional level to provide the required strategies that are lacking at the national level.

Overall, the case studies illustrate the need for governments to create an environment that encourages foreign MNCs to invest, private enterprises to upgrade and innovate, and MNCs and SMEs to forge long-term business linkages as a win-win development strategy. Benefits from GVCs are neither instant nor automatic. The possibility of enhancing them through business linkage programmes shows that there is indeed a way to integrate SMEs from developing countries into the global economy.

The last chapter by Emmanuel Hess compares SDPs in Costa Rica and El Salvador. The analysis is based on a large number of interviews conducted with public institutions, firms and academics in the two countries. Both Costa Rica and El Salvador have few backward linkages between large companies and SMEs. These small open economies, which are strategically located in the centre of the Americas, have started to address the need to support SME linkage development through different SDPs. The benefits that these programmes accrue to local SMEs relate to increases in sales and quality levels stemming from improved business practices and enhanced customer service, along with occasional technology and knowledge transfers that strengthen their productivity and competitiveness.

In Costa Rica, the SDP fosters the formation of backward linkages with SMEs by multinational firms in the medium- and high-technology sectors, which are the backbone of the country's export sector. This SDP, which promotes linkages for exports, is run by the Foreign Trade Corporation of Costa Rica (PROCOMER). The programme aims to increase

the local value added embedded in the country's manufactures and services exports and to raise the competitiveness of SMEs, while helping them to become direct exporters. The programme is responsible for developing 126 new linkages per year, worth some US\$ 80 million.

El Salvador's SDP has a different focus in that it aims to enhance the competitiveness of existing business linkages between small and large native firms oriented towards the local market. By enhancing their linkages with large client companies, SMEs can increase both their competitiveness and income levels. The programme was conceived by the United Nations Development Programme (UNDP) but is based at the Chamber of Commerce and Industry of El Salvador (CCIES). The latter is one of the largest corporate constituencies in the private sector, with 87% of its membership being microenterprises and small businesses. The programme focuses on the current linkages between the client company and its supplier network of between 6 and 10 SME suppliers with the aim of improving the latter's productivity and competitiveness. The client companies finance between 20% and 30% of the programme, while the SDP funds the rest. The results show that around 252 SMEs and microenterprises that were linked to 36 client companies benefited from the programme between 2010 and 2014. SMEs were able to increase their sales and productivity and in some cases reduce their operating costs.

The achievements of the two programmes are mostly related to their refined methodological approaches, track record, intellectual capital and robust IT resources. However, both programmes face challenges that will put to the test their future success. Their main concern is the level of financial sustainability. In El Salvador, the programme has enjoyed the continuous support of the original partnership, in addition to other key stakeholders such as the Inter-American Development Bank (IDB) and United States Agency for International Development (USAID). Its long-time institutional host (CCIES) has leveraged the programme's initial resources to expand across different types of companies and sectors of the Salvadoran economy and society.

Another challenge for both is to find creative ways to provide structured, hands-on business developmental support to the SMEs. In this way, a next step is for the programmes to become more comprehensive, linking effectively with other strategic allies.

Finally, significant opportunities arise from expanding the sectoral scope of SDPs to other industries and large institutional players, including the buoyant tourism sector and even government entities. Indeed, a potentially productive avenue for future expansion is to evaluate how the specialized know-how gathered across different supplier development programmes can be applied by government procurement departments.

Chapter I

Trade and investment between Asia and the Pacific and Latin America and the Caribbean

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Introduction

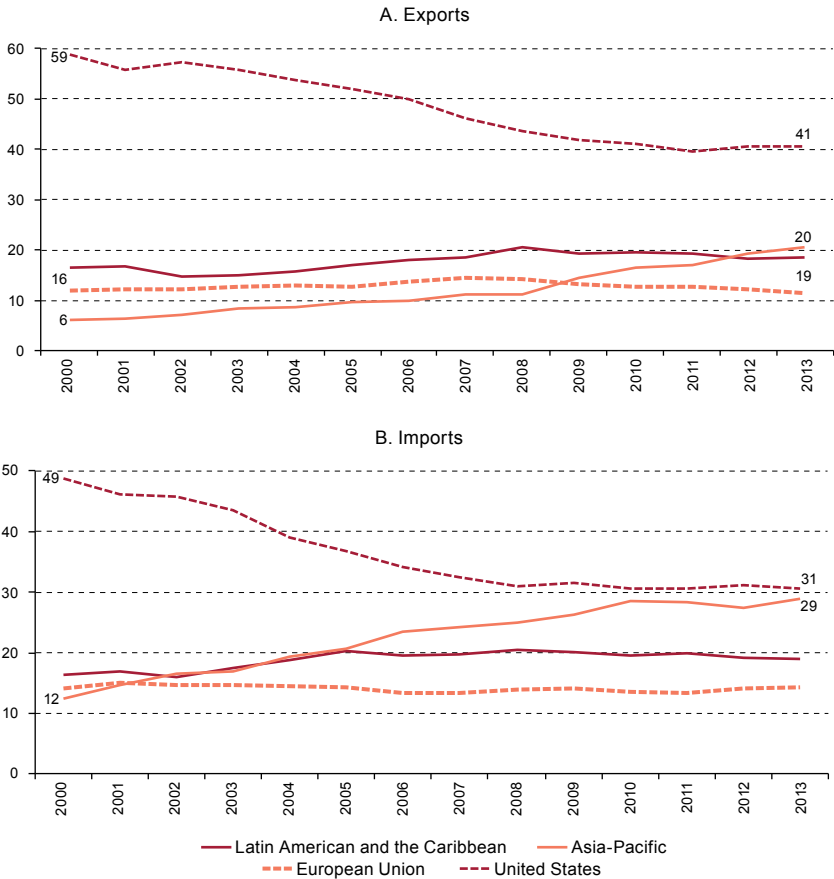
The rise of Asia and the Pacific over the last decade has changed the trade and investment landscape of Latin America and the Caribbean.¹ This chapter looks at the main shifts in the region's trading partners, recent free trade agreements and the composition of trade with Asia and the Pacific (referred to as Asia below). It also describes the flows of foreign direct investment to and from Asia and makes some recommendations on the way forward to improve these relations.

Between 2000 and 2013, total trade between the two regions grew by 17% per year, on average. By 2012, the countries of Asia as a whole became the second largest export destination for Latin America after the United States, surpassing exports to the region itself. One fifth of all exports and almost one half of imports are directed to and come from Asian countries,

¹ This chapter defines Asia and the Pacific as the member countries of the Association of Southeast Asian Nations, plus a further six countries (ASEAN+6), comprising Australia, Brunei Darussalam, Cambodia, China, Hong Kong Special Administrative Region of China, India, Indonesia, Japan, Republic of Korea, Lao People's Democratic Republic, Malaysia, Myanmar, New Zealand, the Philippines, Singapore, Taiwan Province of China, Thailand and Viet Nam.

respectively. During the same period, the share of the United States as a destination market in total regional exports dropped from 59% to 41%. Moreover, imports from Asia have almost the same weight as those from the United States, at 29% (see figure I.1).

Figure I.1
Latin America and the Caribbean: trade shares of selected partners, 2000-2013



Source: Prepared by the authors, on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).

The Asian region as a group is also the fastest growing trading partner of Latin America and the Caribbean, with an eightfold increase in overall trade from 2000 to 2013 (see figure I.2).² Bilateral trade between the two regions rose from US\$ 74 billion at the start of the century to US\$ 522 billion

² Overall trade refers to the sum of exports and imports.

by 2013. The main driver of increased trade with Asia is the rise of China and its high demand for natural resources to sustain its high growth, especially in the manufacturing industry. Therefore, the main source of the dynamic biregional trade relationship is the abundance of natural resources and agricultural goods in Latin America that are in short supply in Asian countries. Another salient feature is that trade between these two regions continued to grow despite a weakening of world trade volumes elsewhere during and after the global economic crisis in 2008-2009.

Figure I.2
Latin America and the Caribbean: total trade with Asia and the Pacific, 2000-2013
(Millions of dollars)



Source: Prepared by the authors, on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).

Trade relations between the two regions witnessed their highest annual growth rate of 27% between 2004 and 2008. This coincided with the entry into effect of the first two free trade agreements between Chile and the Republic of Korea and between Panama and Taiwan Province of China in 2004, as indicated by the vertical line in figure I.2. In the same year, a partial trade agreement was signed between India and the members of the Southern Common Market (MERCOSUR).³ Since these first agreements, numerous negotiations have taken place, and a total of 30 agreements had come into effect as of year-end 2014, with one trade agreement due to come into force soon and another 19 agreements either in their early feasibility stage or currently under negotiation. Chile has been the most proactive country in the region in negotiating trade agreements with Asian countries, with 11 signed by 2014, followed by Peru (5), Costa Rica (2) and Panama (2) (see table I.1).

³ Notwithstanding the introduction of free trade agreements, the rapid growth of the value of trade after 2003 is mostly attributable to the rise in commodity prices and shipped volumes.

Table I.1
Trade agreements between Asia-Pacific and Latin America

Countries	Australia	Brunei Darussalam	China	Republic of Korea	Hong Kong, China	India	Japan	Malaysia	New Zealand	Singapore	Thailand	Taiwan Province of China	Viet Nam
Argentina						PSA (2004)							
Brazil						PSA (2004)							
Chile	FTA (2009)	FTA (2006)	FTA (2006)	FTA (2004)	FTA (2014)	PSA (2007)	AA (2007)	FTA (2012)	FTA (2006)	FTA (2006)	FTA (2013) ^a		FTA (2014)
Colombia			FS	FTA (2014)		TN							
Costa Rica			FTA (2011)	FS					TLC (2013)				
El Salvador				FS								FTA (2008)	
Guatemala				FS								FTA (2006)	
Honduras				FS								FTA (2008)	
Mexico	TN	TN					AA (2005)	TN	TN	TN			TN
Nicaragua												FTA (2008)	
Panama				FS						FTA (2006)		FTA (2004)	
Paraguay						PSA (2004)							
Peru	TN	TN	FTA (2010)	FTA (2011)			AA (2012)	TN	TN	FTA (2009)	FTA (2011)		TN
Uruguay						PSA (2004)							

Source: Prepared by the authors, on the basis of information from Latin American Integration Association (ALADI), Development Bank of Latin America - CAF, Economic Commission for Latin America and the Caribbean (ECLAC), Organization of American States Information System Foreign Trade (SICE) and Ministries of Foreign Affairs and Trade of the relevant countries.

Note Year of entry into force indicated in parentheses. FTA: free trade agreement; AA: association agreement; PSA: partial scope agreement; TN: trade negotiations; and FS: feasibility study.

^a Signed but not in force.

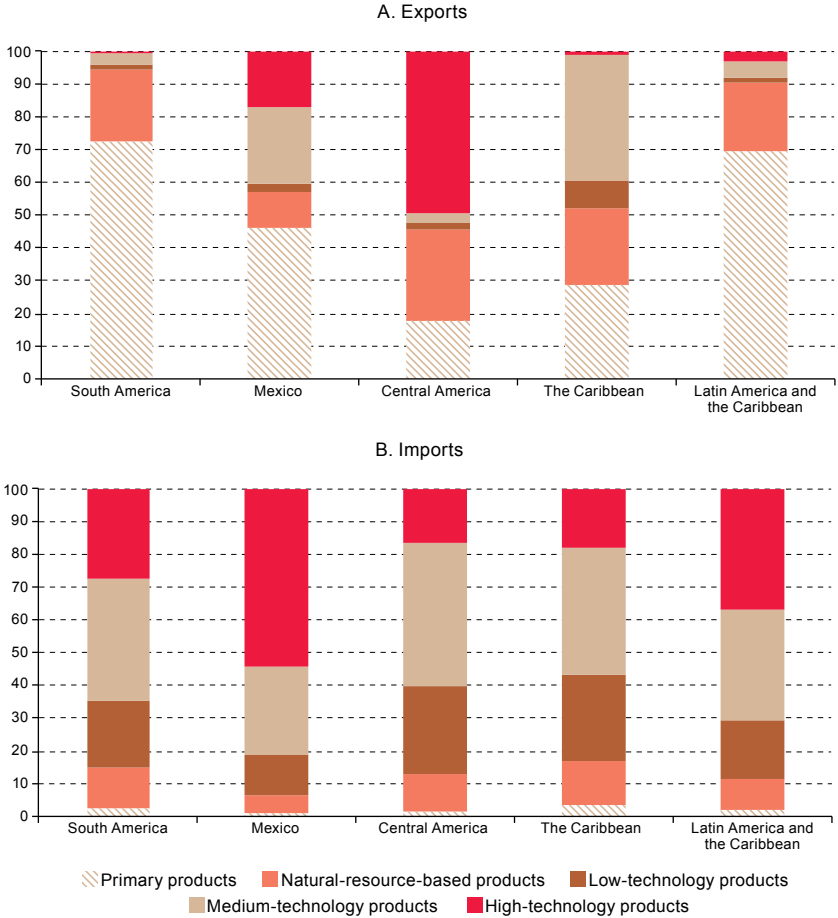
In the second half of 2009, total Latin American and Caribbean imports recorded their largest contraction in 72 years. Exports also contracted by 20% in 2009 before rebounding. However, trade between the region and Asia grew unabated even through the global crisis, except for a short fall in imports to the region in 2009. Exports to China continued to grow through the height of the economic crisis owing to the country's high demand for Latin American exports of minerals, metals and food products, which continued to stimulate growth and improved the region's terms of trade (Rosales and Kuwayama, 2012). During the crisis, the Chinese economy grew at a rate of 9.1%, while the rest of the world confronted its worst economic challenge in eight decades. China had managed to insulate itself from the crisis with its large domestic market and relationships with developing nations, thereby limiting the effects of the crisis, which hit developed countries (primarily OECD countries) the hardest. Since the crisis, China has remained the most dynamic economy in the world and is still regarded as the world's engine of economic growth and recovery.

The value of Latin American and Caribbean imports from Asia increased sixfold, from US\$ 45 billion in 2000 to US\$ 308 billion in 2013. During the same period, exports grew nine times, but from lower levels: that is, from US\$ 21 billion to US\$ 214 billion. Thus, since the value of imports from Asia expanded by more than the value of exports to the same region, the trade deficit increased in this period. The trade relationship is very asymmetrical, and imports of high-technology products (exceeding US\$ 100 billion annually, on average, in 2012-2013) have significantly outpaced commodity exports from Latin America and the Caribbean. The lion's share of the deficit, 85%, is attributable to Mexico and Central America's increasing deficit with China. Mexico, Central America and the Caribbean export only small amounts of primary goods, yet consume medium- and high-technology manufactures. In contrast, South America also imports large amounts of low-, medium- and high-technology goods, but they are offset by exports of primary goods and natural-resource-based products. Thus, the greatest beneficiaries of the increasing trade with Asia-Pacific in the period have been firms involved in exporting agricultural products, minerals and petroleum (Rosales and Kuwayama, 2012).

Figure I.3 illustrates the different compositions of exports and imports between the two regions. The majority of South America's exports to the Asian region, 94%, are made up of primary and natural-resource-based products (average of data for 2012 and 2013). In contrast, exports of these products to Asia account for 57% of exports from Mexico, 46% from Central America and 53% from the Caribbean. Central America is the only subregion that exports a larger amount of medium- and high-technology products than primary and natural-resource-based products. Mexico

was the largest importer of medium- and high-technology goods from Asia, accounting for 81% of total imports from the region. In comparison, medium, and high-technology products imported by South America, Central America and the Caribbean from Asia accounted for 65%, 60% and 57% of the total, respectively.

Figure I.3
Latin America and the Caribbean: composition of trade with Asia and the Pacific, 2012-2013
(Share in total)



Source: Prepared by the authors on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).

A. Trade by major Asian partners

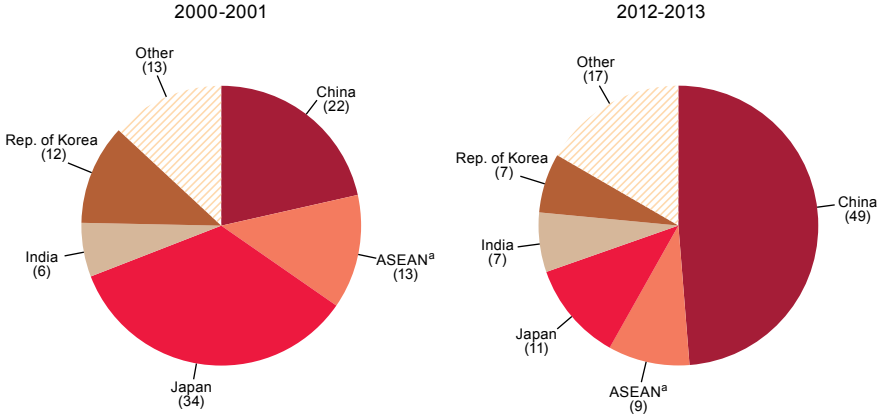
Until the beginning of this century, Japan was Latin America and the Caribbean's main trading partner in the Asian region. Between 2000 and 2013, however, that country's share in Asian trade with Latin America and the Caribbean fell, with exports and imports decreasing by 23 percentage points and 20 percentage points, respectively. The Republic of Korea's share in bilateral trade also fell in the period. In contrast, China and, to a lesser extent, India both increased their share in trade with the region (see figures I.4 and I.5). China alone now accounts for about half of the region's exports to and imports from Asia. China is also about to replace the European Union as the second largest market for Latin American and Caribbean exports, increasing its share from 1% to 10% of total exports between 2000 and 2013.

In 2009-2013, exports from Asia to Latin America accounted for only 4.5% of its total sales to the world, with the highest average shares corresponding to China, Japan and the Republic of Korea. China was the largest importer of Latin American and Caribbean products of all the Asian countries, accounting for 6.7% of its total imports. On average, each country in Asia imported about 4% of its total imports from Latin America and the Caribbean. The main exporting countries were from South America, with smaller contributions coming from Mexico, Central America and the Caribbean (see figures I.6 and I.7).

China has thus become a major trading partner for the Latin American and Caribbean region. Between 2000 and 2013, trade in goods between Latin America and the Caribbean and China increased twenty-two-fold, from just over US\$ 12 billion to nearly US\$ 275 billion. In comparison, Latin American and Caribbean trade with the world grew only threefold during the same period. Regional exports from Latin America and the Caribbean to China increased twenty-seven-fold during the period, with imports increasing twenty times.

If bilateral trade were to keep growing in the coming years at the same average as in 2010-2013 (12% a year), it would reach US\$ 500 billion by 2019. China's President Xi Jinping proposed this as a 10-year goal at the first summit between China and Latin America and the Caribbean, held in Brasilia in July 2014. If bilateral trade were to expand over the next few years at the same rate as in 2013 (6%), it would reach the goal by 2023 or 2024, in line with the time frame put forth by President Xi Jinping.

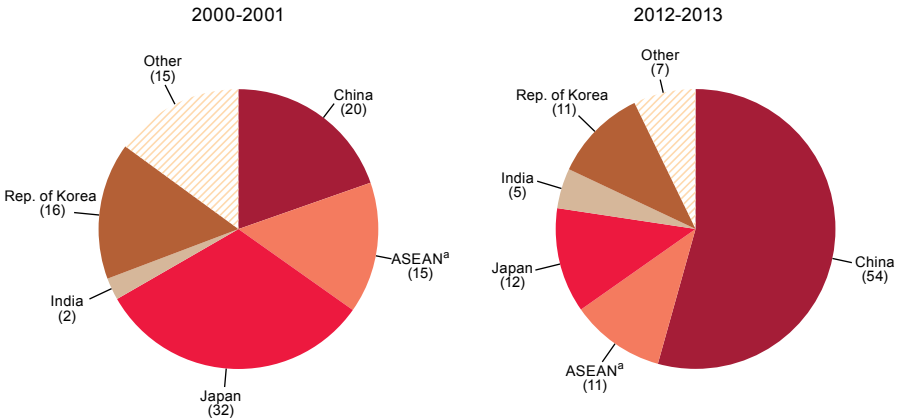
Figure I.4
Latin America and the Caribbean: share of exports to Asia and the Pacific,
averages for 2000-2001 and 2012-2013
(Percentages of total exports)



Source: Prepared by the authors, on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).

^a Association of Southeast Asian Nations.

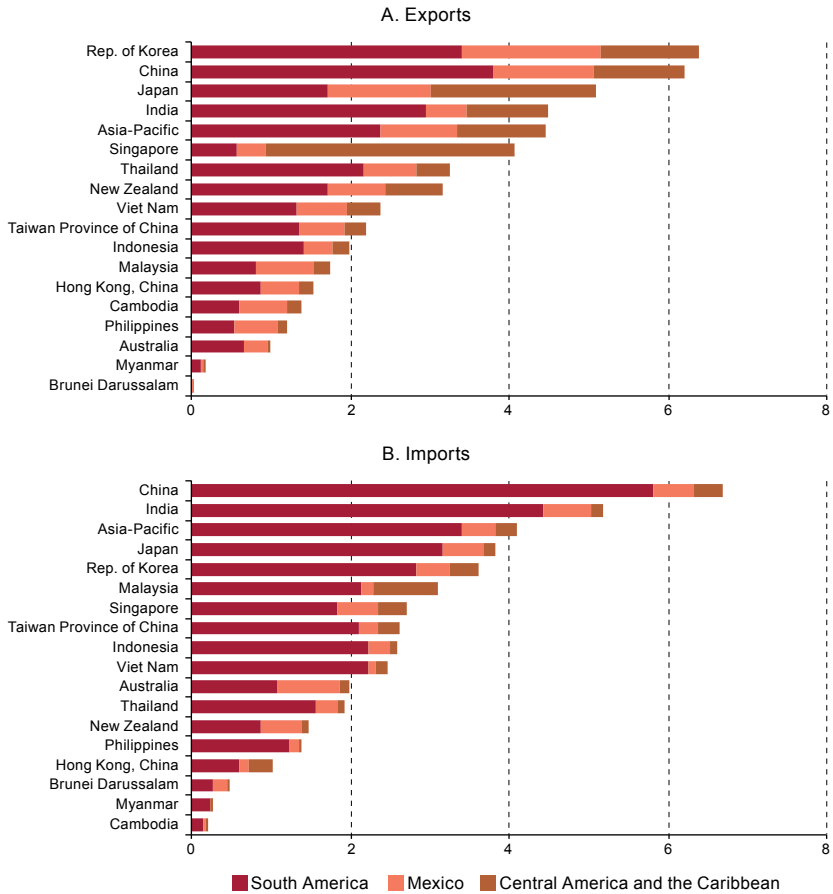
Figure I.5
Latin America and the Caribbean: share of imports from Asia and the Pacific,
averages for 2000-2001 and 2012-2013
(Percentages of total imports)



Source: Prepared by the authors, on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).

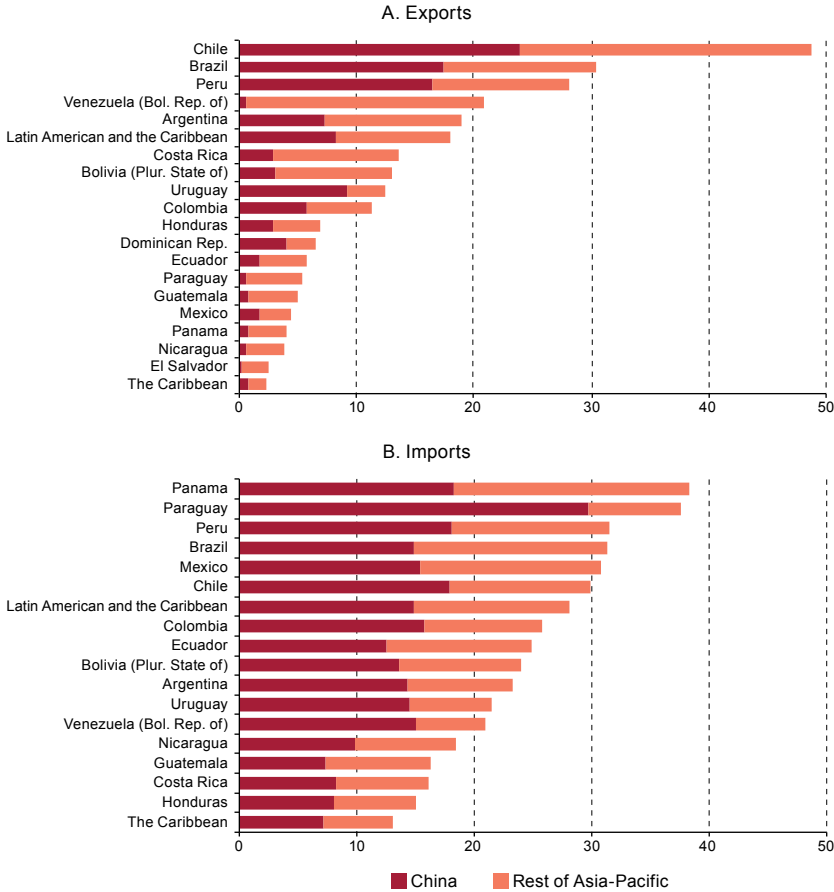
^a Association of Southeast Asian Nations.

Figure I.6
Asia and the Pacific: trade shares of Latin America and the Caribbean, 2009-2013
(Percentages of country's total exports and imports)



Source: Prepared by the authors on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).

Figure I.7
Latin America and the Caribbean: trade shares of Asia and the Pacific, 2009-2013
(Percentages of country's total exports and imports)



Source: Prepared by the authors on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).

The growing trade deficit between Latin America and the Caribbean and China is mainly due to Mexico, which accounts for approximately 85% of the region's entire deficit with China. In 2013, the Bolivarian Republic of Venezuela, Brazil and Chile ran a trade surplus with China on the back of their commodity exports. However, the region's trade with China is far less diversified than with the rest of the world. In 2013, commodities made up 73% of the region's exports to China, versus 41% to the rest of the world. The combination of low-, medium- and high-technology products exported to China accounted for 6%, versus 42% to the rest of the world. Furthermore, 91% of Latin

America and the Caribbean's imports from China were made up of medium- and high-technology goods, compared with 69% from the rest of the world. It is therefore clear that the region's trade with China is mostly of an inter-industrial nature, with manufactured goods being traded for raw materials.

Bilateral trade between India and Latin America and the Caribbean has increased over the past 13 years at an annual growth rate of just over 20%. The region's trade with India is far more balanced than its trade with China, with mild deficits and surpluses occurring over the period. Indian exports to Latin America and the Caribbean between 2005 and 2011 consisted largely of medium-technology manufactured goods, as well as some intermediate products and primary products. Notable exports included motorcycles, yarns and automobile parts with shares in excess of 2%. The presence of intermediate inputs such as organic dyes, textiles and laminated products may imply an emerging integration of Indian products in the national value chains of buyer countries in Latin America and the Caribbean. In comparison, exports to India from Latin America and the Caribbean showed a similar pattern as exports to China, with the majority of products being based on processed and primary natural resources.

Trade between Latin America and the Caribbean and the Republic of Korea follows a similar pattern as trade with India and China, where raw materials make up the vast majority of Latin American exports. The first 20 products, which represent 75% of all products exported, are made up of raw materials (including copper, iron, zinc, tin and natural gas) and some agricultural and forestry products. The overall balance of trade shows that the region is running a deficit due to the large share of imports of Korean manufactured goods. These include vehicles, light boats, liquid crystal displays, tankers, gasoline, telephones and parts, machinery and equipment, automobile parts, tyres and electronic equipment.

B. Trade by type of goods

Latin American and Caribbean countries produce nearly half of the world's fruit and vegetable output and a large share of the world's milk and meat. The region produces around 45% of the world's copper, as well as large volumes of other minerals such as iron, zinc and molybdenum (ECLAC, 2012). It is therefore not surprising that the region's exports to Asia are concentrated in a few primary products, including soybean, iron, oil, copper, maize, sugar and cellulose. The majority of Latin American exports (69%) is made up of 10 primary goods, with a value of some US\$ 120 billion (see table I.2). In contrast, imports from Asia represent a more varied combination of low-, medium- and high-technology

manufactured goods (see table I.3). The top 10 products imported from Asia account for 34% of total imports and amount to around US\$ 96 billion.

Table I.2
Latin America and the Caribbean: top 10 exports to Asia and the Pacific and imports of the same goods, 2013
(Millions of dollars and percentages)

SITC Rev.2 ^a	Main products	Exports	Imports	Balance	Percentage of total exports
2222	Soybean	23 379	0	23 379	13.3
2815	Iron ore and concentrates	22 099	1	22 098	12.6
2871	Copper ore and concentrates	21 994	5	21 989	12.5
3330	Crude oils and oils obtained from bituminous minerals	18 434	507	17 928	10.5
6821	Copper and copper alloy, both refined and unwrought	14 888	13	14 875	8.5
0813	Oilcake and other residues of oilseed	5 724	2	5 722	3.3
0440	Maize (excluding sweet corn), unmilled	4 906	4	4 903	2.8
2517	Chemical wood pulp, soda or sulphate	3 490	0	3 490	2.0
0611	Sugar, beet or cane, raw, in solid form	3 484	0	3 484	2.0
2816	Iron ore agglomerates	2 680	0	2 679	1.5
	Top 10 products	121 078	531	120 547	68.8
	Other products	54 901	279 860	-224 959	31.2
	Total	175 979	280 391	-104 412	100.0

Source: Prepared by the authors, on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).

^a Standard International Trade Classification, revision 2.

Table I.3
Latin America and the Caribbean: top 10 imports from Asia and the Pacific and exports of the same goods, 2013
(Millions of dollars and percentages)

SITC Rev.2 ^a	Main products	Exports	Imports	Balance	Percentage of total exports
7649	Parts and accessories for telecommunication apparatus	580	21 993	-21 413	7.8
7764	Electronic integrated circuits and micro-assemblies	1 548	13 383	-11 835	4.8
7643	Television equipment, broadcasting; transmitters, etc.	168	12 014	-11 846	4.3
7810	Passenger automobiles (excluding buses)	1 886	11 438	-9 552	4.1
7849	Other parts and accessories of motor vehicles of groups 722, 781–783	732	8 685	-7 953	3.1
7599	Parts and accessories suitable for machines of subgroups 751 and 752	112	7 712	-7 600	2.8
7522	Digital automatic data-processing machines	9	6 429	-6 420	2.3
7525	Peripheral units, including control and adaption units	272	6 172	-5 900	2.2
7721	Switches, relays, fuses, etc.; boxes and control panels	148	4 745	-4 597	1.7
9310	Vehicles for the transport of goods	343	3 794	-3 451	1.4
	Top 10 products	5 799	96 365	-90 566	34.4
	Other products	170 180	184 026	-13 846	65.6
	Total	175 979	280 391	-104 412	100.0

Source: Prepared by the authors on the basis of United Nations Commodity Trade Statistics Database (COMTRADE).

^a Standard International Trade Classification, revision 2.

Disaggregating the trade balances by type of goods reveals that most of the deficit comes from the trade of high-, medium- and low-technology manufactured goods with China, followed by the trade of medium-technology manufactured goods with Japan (see table I.4). On the other side, Mexico and South America's trade of high- and medium-technology goods has produced most of the regional deficit, which has not been offset by the surplus in trade of primary products between South America and Asia-Pacific (see table I.5).

Table I.4
Latin America and the Caribbean: average trade balance with Asia and the Pacific, 2012-2013
(Millions of dollars)

Trade balance	ASEAN ^a	China	Republic of Korea	India	Rest of Asia	Japan	Total
Primary products	10 151	71 533	9 672	23 982	4 647	19 257	139 242
Natural-resource-based manufactures	6 072	9 258	742	-2 853	2 712	-88	15 844
Low-technology manufactured goods	-4 110	-35 253	-2 935	-2 422	-1 540	-3 680	-49 941
Medium-technology manufactured goods	-5 837	-41 721	-14 066	-3 356	-4 265	-20 237	-89 481
High-technology manufactured goods	-14 113	-65 918	-11 048	-1 022	-5 073	-6 934	-104 108
Total	-7 837	-62 100	-17 635	14 330	-3 519	-11 682	-88 444

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

^a Association of Southeast Asian Nations.

Table I.5
Latin America and the Caribbean (selected countries and subregions): average trade balance with Asia and the Pacific, 2012-2013
(Millions of dollars)

Trade balance	South America	Mexico	Central America	The Caribbean	Latin America and the Caribbean
Primary products	131 788	7 106	322	26	139 242
Natural-resources-based manufactures	20 728	-4 026	-431	-427	15 844
Low-technology manufactured goods	-31 677	-14 283	-2 884	-1 097	-49 941
Medium-technology manufactured goods	-56 697	-26 623	-4 712	-1 448	-89 481
High-technology manufactured goods	-44 092	-58 845	-405	-766	-104 108
Total	20 051	-96 672	-8 111	-3 712	-88 444

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

C. Foreign direct investment between Latin America and the Caribbean and Asia

Total outward foreign direct investment (FDI) from Latin America and the Caribbean and from the Asian region has increased since the beginning of the decade, although the former remains much smaller than the latter.⁴ The Latin American and Caribbean region (excluding offshore financial centres) almost quadrupled its FDI outflows from around US\$ 9 billion in 2000 to US\$ 33 billion by 2013. In comparison, the Asian region increased its FDI outflows about three and a half times in the same period, from about US\$ 128 billion to US\$ 437 billion. The top three investing nations from Latin America and the Caribbean were Brazil, Chile and Mexico, and in Asia, they were China, Japan and Singapore.

Asia's burgeoning FDI outflows can be attributed, in part, to the region's rapid growth and high demand for natural resources and food products, as seen in the previous section. Other factors include the pressures faced by Asian firms to reduce costs and seek cheaper labour and the acquisition of strategic assets by Asian governments. Thus, Asia's investments have focused on foreign markets as a way to increase exports, lower production costs, avoid trading restrictions and expand national firms into global players (ECLAC, 2014).

Increased FDI from Latin America and the Caribbean has come mostly from Brazil, Chile, Mexico and Colombia, as firms have sought to expand their international assets in natural resources (hydrocarbons, mining, iron and steel), services (energy, telecommunications, retail trade and air transport) and mass consumption manufacturing (food and beverages). Other factors include the opening-up of the region's economies and the lifting of trade barriers, which have facilitated the region's expansion into international markets. In addition, local firms are expanding their operations either regionally or internationally in order to compete with transnational corporations entering their domestic markets (ECLAC, 2011a).

In 2013, FDI inflows to South America and the subregions declined relative to the previous three years. In comparison, inflows to Central America increased, owing chiefly to the US\$ 18 billion acquisition of the Mexican firm Grupo Modelo by Belgian brewer Anheuser-Busch InBev, which practically doubled the FDI figures from 2012. Latin American and Caribbean outflows of FDI have declined as the foreign affiliates of Brazilian and Chilean transnationals have repaid loans to their parent companies and stalled acquisitions (UNCTAD, 2014a).

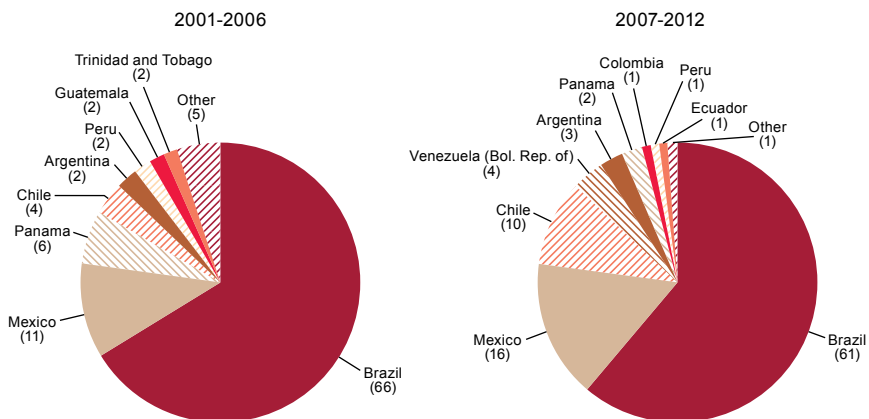
⁴ The analysis in this section excludes offshore financial centres such as the Cayman Islands, United States Virgin Islands, British Virgin Islands and the Bahamas.

Although both regions have dramatically increased their FDI outflows to the world, their bilateral investments have not expanded at the same rate. Latin American and Caribbean outward FDI accounted for 0.13% of flows into Asia from 2001 to 2006, dropping to 0.03% from 2007 to 2012, most likely as a result of the financial crisis. In comparison, the portion of Asian FDI outflows received by Latin American and Caribbean rose during the period, albeit remaining small in size, from 2.0% to 5.6% of total outward FDI.

The Asian region is investing larger amounts in Latin America and the Caribbean than vice versa. FDI flows from Latin America and the Caribbean to Asia were actually negative in 2010, when Mexico divested around US\$ 7.5 billion in Japan after the financial crisis (UNCTAD, 2012). In 2012, FDI inflows began declining in South America, owing predominantly to equity divestment in the mining sector caused by falling commodity prices, rising extraction costs and declining ore grades (UNCTAD, 2014a; ECLAC, 2014). During that year, Latin American and Caribbean FDI inflows from Asia amounted to US\$ 9 billion compared with only US\$ 75 million in the opposite direction.

The two largest economies in Latin America and the Caribbean —Brazil and Mexico— are also the largest receivers of FDI from Asia (see figure I.8). Brazil accounts for 60% of Asian FDI, while Mexico receives significantly less, but still more than the rest of the region. In addition to having large domestic markets, both countries facilitate access to other markets: Mexico with its partners to the north and Brazil with MERCOSUR.

Figure I.8
Latin America and the Caribbean: FDI inflows from Asia and the Pacific
by country, 2001-2006 and 2007-2012
(Percentages)



Source: Prepared by the authors, on the basis of United Nations Conference on Trade and Development (UNCTAD), "Bilateral FDI Statistics 2014", Geneva, 2014 [online] <http://unctad.org/en/Pages/DIAE/FDI%20Statistics/FDI-Statistics-Bilateral.aspx>.

The value of Asian inflows into Latin America and the Caribbean increased by 83% in 2001-2012. During this period, Japan was the most dominant investor of all the Asian countries. China increased its share of investments from an average of 11.4% in 2001-2006 to 15.8% in 2007-2012. From 2000 to 2013, China (including Hong Kong Special Administrative Region and Macao Special Administrative Region) increased its FDI outflows by almost US\$ 122 billion, versus US\$ 104 billion for Japan US\$ 24 billion for the Republic of Korea and US\$ 1 billion for India. China's deficiency in natural resources explains the predominantly natural-resource-seeking nature of the investment by Chinese firms. Other categories include strategic asset-seeking, efficiency-seeking and market-seeking investments. The largest deals made in the mining sector have been conducted by Chinese State-owned enterprises (ECLAC, 2013).

Chinese companies are also the most important Asian foreign investors in the oil and gas industries in Argentina, the Bolivarian Republic of Venezuela, Brazil, Colombia, Ecuador and, to a lesser extent, Peru. Brazil has managed to attract Chinese investments outside the natural resources sector, with Chinese firms operating both manufacturing and electricity firms. Still, there are many countries in Latin America that have not attracted Chinese investment. As stated earlier, China is far from being the leading investor in Latin America, although its role has expanded significantly over the period. The European Union and the United States continue to have the largest investments in Latin America and the Caribbean (ECLAC, 2013). Two thirds of the Republic of Korea's direct investment to the region went to Brazil and Mexico, owing to their large domestic markets and access to third markets. Mexico received 26% of all Korean flows to the region in 2012 (ECLAC, 2015). Table I.6 shows the top three Asian investors and the top five receiving countries in Latin American and the Caribbean in the period.

With regard to FDI flows from Latin America and the Caribbean to Asia in 2001-2006, Thailand was the largest recipient country with a 74% share, followed by Taiwan Province of China and Japan (see figure I.9). In 2007-2012, both China and India increased their shares of inflows to become the first and second receivers, with Taiwan Province of China moving down to third place.

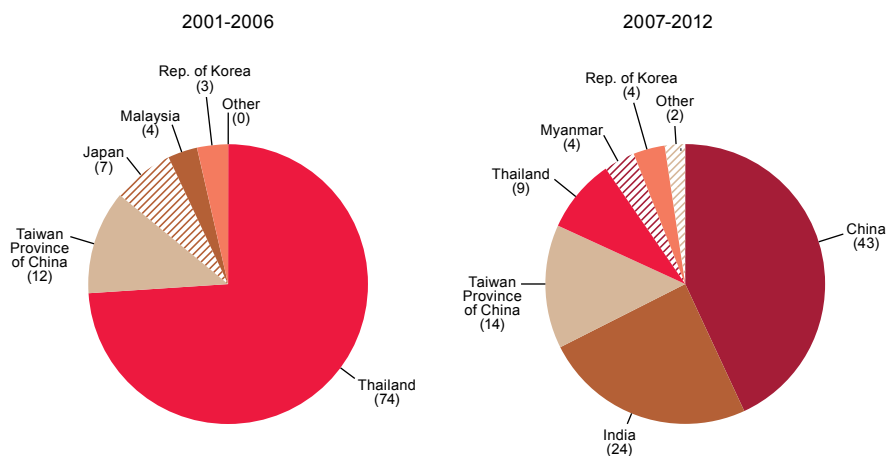
Table I.6
Latin America and the Caribbean (selected countries): top three investors
from Asia and the Pacific, 2001-2012
(Millions of dollars)

Country	Period	Largest investor	Second largest investor	Third largest investor
Brazil	2001-2006	Japan (3 354)	Australia (1 102)	Republic of Korea (341)
Brazil	2007-2012	Japan (16 832)	China (4 603)	Australia (2 341)
Chile	2001-2006	Japan (159)	China (158)	Australia (92)
Chile	2007-2012	Japan (5 230)	Australia (764)	China (600)
Mexico	2001-2006	Singapore (447)	Republic of Korea (376)	Taiwan Province of China (147)
Mexico	2007-2012	Japan (4 684)	Republic of Korea (870)	Singapore (741)
Panama	2001-2006	China (364)	Taiwan Province of China (132)	Republic of Korea (122)
Panama	2007-2012	Taiwan Province of China (470)	Republic of Korea (339)	Japan (120)
Venezuela (Bolivarian Republic of)	2001-2006 ^a	-	-	-
Venezuela (Bolivarian Republic of)	2007-2012	China (876)	India (461)	Viet Nam (288)

Source: Prepared by the authors, on the basis of United Nations Conference on Trade and Development (UNCTAD), "Bilateral FDI Statistics 2014", Geneva, 2014 [online] <http://unctad.org/en/Pages/DIAE/FDI%20Statistics/FDI-Statistics-Bilateral.aspx>.

^a The Bolivarian Republic of Venezuela received no investment in 2001-2006.

Figure I.9
Latin America and the Caribbean: FDI outflows to Asia and the Pacific
by country, 2001-2006 and 2007-2012
(Percentages)



Source: Prepared by the authors, on the basis of United Nations Conference on Trade and Development (UNCTAD), "Bilateral FDI Statistics 2014", Geneva, 2014 [online] <http://unctad.org/en/Pages/DIAE/FDI%20Statistics/FDI-Statistics-Bilateral.aspx>.

As shown in table I.7, Panama is the largest Latin American and Caribbean contributor of FDI to Asia-Pacific, with Barbados in second place. In the earlier period under consideration (2001-2006), China and India received no investment from the region, but they attracted substantial sums in the later period (2007-2012).

Table I.7
Asia and the Pacific (selected countries): top three investors
from Latin America and the Caribbean
(Millions of dollars)

Country	Period	Largest investor	Second largest investor	Third largest investor
China	2001-2006	-	-	-
China	2007-2012	Barbados (310)	-	-
India	2001-2006	-	-	-
India	2007-2012	Chile/Mexico (65)	Brazil (18)	Panama (13)
Japan	2001-2006	Argentina (23)	Panama/Barbados (22)	Brazil (20)
Japan	2007-2012	Barbados (138)	Argentina (36)	Panama (20)
Republic of Korea	2001-2006	Uruguay (18)	Chile/Barbados (7)	Panama (4)
Republic of Korea	2007-2012	Belize (19)	Mexico (10)	Panama (9)
Taiwan Province of China	2001-2006	Panama (149)	Brazil (11)	-
Taiwan Province of China	2007-2012	Panama (101)	Brazil (3)	-
Thailand	2001-2006	Panama (974)	-	-
Thailand	2007-2012	Panama (62)	-	-

Source: Prepared by the authors, on the basis of United Nations Conference on Trade and Development (UNCTAD), "Bilateral FDI Statistics 2014", Geneva, 2014 [online] <http://unctad.org/en/Pages/DIAE/FDI%20Statistics/FDI-Statistics-Bilateral.aspx>.

Note: A dash indicates that no investment was received in that period.

D. Concluding remarks

Trade and investment relations between Latin America and the Caribbean and Asia and the Pacific have strengthened since 2000. Trade agreements between the regions affirm their commitment to closer relations and increased trade. Overall, this increased trade with Asia has had positive

impacts in the region, including improvement in the terms of trade, increased fiscal revenues, increased employment in certain sectors and a reduction of poverty. Trade with Asia has allowed the region to reduce its exposure to less dynamic developed markets.

However, this relationship also presents some challenges. Since trade with Asia is basically between industries—that is, exporting primary products and importing medium- and high-technology products—the structure of the exports has become less diversified, and there is a tendency towards re-primarization. Many analysts fear that a return to exporting a greater share of primary products could slow down the industrialization and development of the region. In addition, since the value of imports has outpaced that of exports, the region runs the risk of becoming entrenched in a widening trade deficit with Asia. However, there are important differences within the region, where South America has managed to maintain a surplus with Asia, while Mexico's exports have not offset its imports from Asia.

The main challenge for Latin American and Caribbean countries is to diversify their exports towards higher value added goods and services. At the same time, they should increase efforts to attract foreign direct investment from Asia towards key sectors in industry, services and infrastructure. To attract this investment, the region must improve its transport links and infrastructure. Reducing and simplifying burdensome trade-related transactions is also essential for attracting more investment.

The relationship with Asia and the Pacific brings great opportunities to the region. Although China's growth is expected to ease over the coming years, the economy will still expand at relatively high rates. Fast urbanization and a growing middle class will continue to underpin China's demand for the energy, minerals and food products that Latin America and the Caribbean exports, providing an opportunity for the region to diversify its export basket to China. India and the ASEAN countries will also continue to grow robustly over the coming years. Given this outlook for continued growth in demand for the region's products, countries should work to improve the quality of their exports, which are mostly based on natural resources, so as to progress into higher levels of processing and move beyond inter-industrial trade. In addition, trading with Latin America and the Caribbean as a single group would be more attractive to Asian countries than pursuing bilateral relations with many individual countries. Consequently, regional integration is now more relevant than ever in view of the need to facilitate exports through integrated infrastructure and more efficient trade processes.

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Chapter II

The role of small and medium-sized enterprises in Latin American exports to Asia

*Antonio Martner
Nanno Mulder
Roberto Urmeneta*

Summary

The fast growth of exports from Latin America to Asia over the last decade has been widely documented, together with the predominance of commodities in these flows, but little is known about the behaviour of firms that produce these exports. This chapter contrasts the behaviour of large firms versus small and medium-sized enterprises (SMEs) that export from Latin America to Asia. The analysis is based on microdata from customs agencies in Mexico, Chile and six smaller countries in the region for the period 2007 to 2011. Examples of successful exporting companies in the region are also provided. The evidence presented here leads to several conclusions. First, exporting companies in Latin America represented less than 1% of total companies in the region in the period. Second, the share of SMEs in Latin American exports to Asia was lower than their share in Latin American exports to the rest of the world. Third, more than half of all SMEs exported a single product to one destination in Asia. Fourth,

the rotation of SMEs exporting to Asia was higher than those exporting elsewhere. However, as the rate of entry of SMEs into the Asian market was greater than the number of firms leaving, the number of exporters to this region increased. The fifth finding, which is linked to the previous one, is that a relatively high share of the annual variations in SME export revenues is due to the entry of new firms to the Asian market and exit of existing ones. Finally, the case studies suggest that support from export promotion agencies was crucial for several SMEs that exported for the first time to Asia.

Introduction

The stagnation of Latin American export growth from 2012 to 2014 has revealed the region's fragile international insertion in the world economy, based in large part (in particular in South America) on commodities with little value added, produced by few large firms. In response, Latin American governments are implementing measures to facilitate the inclusion of new products in the export basket, which incorporate more knowledge and technology, while promoting a greater participation of small and medium-sized enterprises (SMEs) in total exports. These companies are key agents to bring about structural changes and productivity growth.

The export growth stagnation has not interrupted a more than a decade-long trend of fundamental changes in the shares of export markets. From 2000 to 2013, the share of Asia in total Latin American exports increased from 6% to 20%, whereas the share of the United States fell from 59% to 41%, according to the United Nations Commodity Trade Statistics Database (COMTRADE). In contrast, Latin America accounted for merely 4% of Asia's total exports in 2011. Moreover, trade between Asia and Latin America was concentrated in few countries: 90% of Latin America's total exports went to China, India, Japan and the Republic of Korea, while 80% of Asia's exports to Latin America were directed to Argentina, Brazil, Chile and Mexico.

The rapid growth of China and the rest of Asia has led to fast-growing demand for raw materials from Latin America. These include copper, paper pulp, poultry, soy, steel and sugar.¹ Latin America's exports to Asia have contributed to a renewed increase in the share of commodities in total exports, a process also referred to as the reprimarization of exports. Since exports of raw materials are dominated by few companies, the region faces the challenge of incorporating more SMEs into its export base. This is needed to turn the ongoing trend of export concentration in few firms.

¹ In turn, China and the rest of Asia provide LA with a large variety of manufactured goods including automobiles, electronic equipment, and parts and components.

SMEs dominate the economies and employment in Latin America. In 2002, they accounted for 90% to 98% of all firms, generated 60% to 65% of employment and represented 35% to 40% of gross domestic product (GDP) (World Bank data). SMEs are present in all sectors of the economy and are located in both cities and rural areas. Their productivity is generally low, due to difficulties in accessing human capital, exports, markets and technology.

This chapter sheds light on the role of firms in general and SMEs in particular in Latin American exports to Asia. It has five sections. Section A discusses different measures of micro-, small and medium-sized enterprises. Section B compares the characteristics of SMEs that export to Asia with those that export to eight other selected countries. Section C conducts a deeper analysis of exporting firms based on three indicators: the concentration of shipments, the rotation of firms and the firm dynamics underlying variations in aggregate export values. Section D presents some case studies of successful SME exporters that have managed to enter Asian markets. Finally, some conclusions are presented.

A. Methodology

The multiple national and international classifications for companies by size hinder international comparisons of the role of SMEs in the economy, employment and exports. On the one hand, governments adopt their own definitions in accordance with their policy objectives and historical trajectories. On the other, different international organizations, such as the Organization for Economic Cooperation and Development (OECD), United Nations Development Programme (UNDP) and World Bank, also have their own definitions for international comparisons.

These size classifications follow different procedures, such as single variables, combined formulas, non-numerical criteria, relative indicators and self-classification.² In the conventional literature, four variables for classifying companies according to size stand out: assets, employment, exports and sales. Several studies consider the first and second unsuitable for size classifications. For example, Gibson and van der Vaart (2008) argue that the number of employees is not a precise variable, as different productivity levels may lead to wide variations in the size of companies with the same number of workers. Others criticize the asset variable, because many SMEs do not keep detailed accounts or minimize their value for tax purposes.

² The combined formulas use a mix of variables such as assets, sales or workers. Non-numerical criteria consider dimensions such as the relationship between ownership and management. The relative indicators relate one of the former variables to, for example, GDP per capita. Self-classification involves the use of a questionnaire on which companies choose their size category (Álvarez and Durán, 2009).

Table II.1 shows examples of size definitions used by three Latin American countries and the World Bank. In practice, the firm groupings by company size (micro, small, medium, and large) can vary significantly according to the criteria used. Differences in thresholds among countries may reflect different levels of economic development or may be due to other considerations. The sales variable is probably the best to stratify firms for international comparisons. This is because it can be linked to macroeconomic indicators such as total exports and gross domestic product (GDP). These links illustrate the role of (a group of) firms within the export sector or in relation to the total economy. It also allows calculating a company's export coefficient (exports over sales), which shows the importance of foreign sales in relation to domestic sales. The analysis below considers two categories of firms: SMEs (including microenterprises) and large enterprises.

Table II.1
Chile, Costa Rica, the Plurinational State of Bolivia and the World Bank:
company size classifications

	Annual sales (millions of dollars)		Annual export values (millions of dollars)		Workers (number)		Asset values (millions of dollars)	
	From	To	From	To	From	To	From	To
Bolivia (Plurinational State of)								
Large	3.31	...	2.07	...	50	...	1.65	...
Medium	0.83	3.31	0.21	2.07	20	49	0.41	1.65
Small	0.17	0.83	0.02	0.21	10	19	0.04	0.41
Micro	-	0.17	-	0.02	1	9	-	0.04
Chile								
Large	4.60	...	...	...	200	...	...	...
Medium	1.15	4.60	...	...	50	199	...	...
Small	0.11	1.15	...	...	10	49	...	...
Micro	-	0.11	...	...	1	9	...	...
Costa Rica								
Large	1.04	...	...	...	100	...	0.65	...
Medium	0.36	1.04	...	...	35	100	0.22	0.65
Small	0.10	0.36	...	...	10	35	0.06	0.22
Micro	-	0.10	...	...	-	10	-	0.06
World Bank								
Large	15.00	...	...	...	300	...	...	...
Medium	3.00	15.00	...	...	50	300	...	...
Small	0.10	3.00	...	...	10	50	...	...
Micro	-	0.10	...	...	-	10	...	...

Source: The Plurinational State of Bolivia: Ministry of Productive Development and Plural Economy, "Reglamento para el registro y acreditación de unidades productivas", Ministerial Resolution, No. 200-2009, La Paz, 2009; Chile: Ministry of Economy, "Estatuto pyme", Santiago, Chile, 2009; Costa Rica: Law No. 8262 and executive decree No. 37121; World Bank: IFC Advisory Services, *The SME Banking Knowledge Guide*, Washington, D.C., 2010.

The sales figure used to separate these two categories of firms needs to be adjusted to a country's level of economic development. That is, a typical SME in a less developed country reports lower sales than its peer in a more developed country, in part because the productivity of the latter is much higher. For this purpose, we use the following definition of an SME: "An SME is a formal enterprise with annual turnover, in US dollar terms, of between 10 and 1,000 times the mean per capita gross national income, at purchasing power parity, of the country in which it operates" (Gibson and van der Vaart, 2008, p. 18). The data for this study come from customs' registers, which report export values (in US\$ FOB) but not sales. We therefore use the former as a proxy of the latter. Compared with the GDP per capita valued at the exchange rate, the valuation of this indicator at purchasing power parity (PPP) has the advantages of taking into account differences in purchasing power of currencies across countries and eliminating short-term deviations from the medium-term equilibrium exchange rate.

The aggregate data used for this chapter came directly from customs agencies in 14 Latin American countries. The more in-depth analysis is limited to a smaller group of seven countries, consisting of Chile, Costa Rica, Ecuador, El Salvador, Guatemala, the Plurinational State of Bolivia and Uruguay. Additionally, time series for 2007 to 2011 from Mexican customs were incorporated into some tables to provide a wider Latin American perspective. These organizations granted ECLAC access to their microdata on the understanding that data confidentiality would be maintained. Data for individual countries were checked for inconsistencies, made comparable across countries and merged into a single database with data from 2006 to 2012.

Asia is defined here as a group of 19 countries, covering the Association of Southeast Asian Nations (ASEAN) plus six other nations. These are (in decreasing order of the size of their economies in 2013): China, Japan, India, Australia, the Republic of Korea, Indonesia, Taiwan Province of China, Thailand, Malaysia, Singapore, Hong Kong Special Administrative Region of China, the Philippines, New Zealand, Viet Nam, Myanmar, Macao Special Administrative Region of China, Brunei Darussalam, Cambodia and the Lao People's Democratic Republic.

B. Dynamics of Latin American exporters to Asia

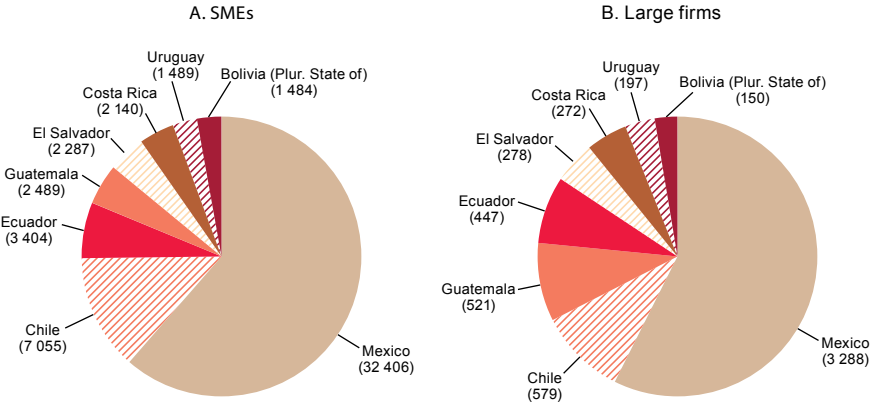
1. Latin America's universe of exporters

Latin America's 14 largest economies had about 113,000 export firms in 2011. This is a small number compared with other developed and developing

regions.³ The three countries with the largest number of export firms in the region were Mexico (35,000), Brazil (almost 19,000) and Argentina (11,000). The sample of export firms in this chapter consist of two groups. The larger group of eight countries includes Mexico and accounted for 55% of all export firms in Latin America. The smaller group of seven countries excludes Mexico and represented 23% of all export firms in the region in 2011.

Within the eight-country group, exporting SMEs accounted for 88% of all exporting firms in 2011. At the country level, the SME exporters’ share was highest in Chile (92%) and Mexico (91%) and lowest in Guatemala (85%) and Ecuador (87%). Mexico’s large and small firms represented about two thirds of the total sample (see figure II.1).

Figure II.1
Latin America (8 countries):^a number of exporting SMEs
and large exporting firms, 2011



Source: Authors’ calculations, on the basis of customs data from each country.
^a The eight countries are Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, the Plurinational State of Bolivia and Uruguay.

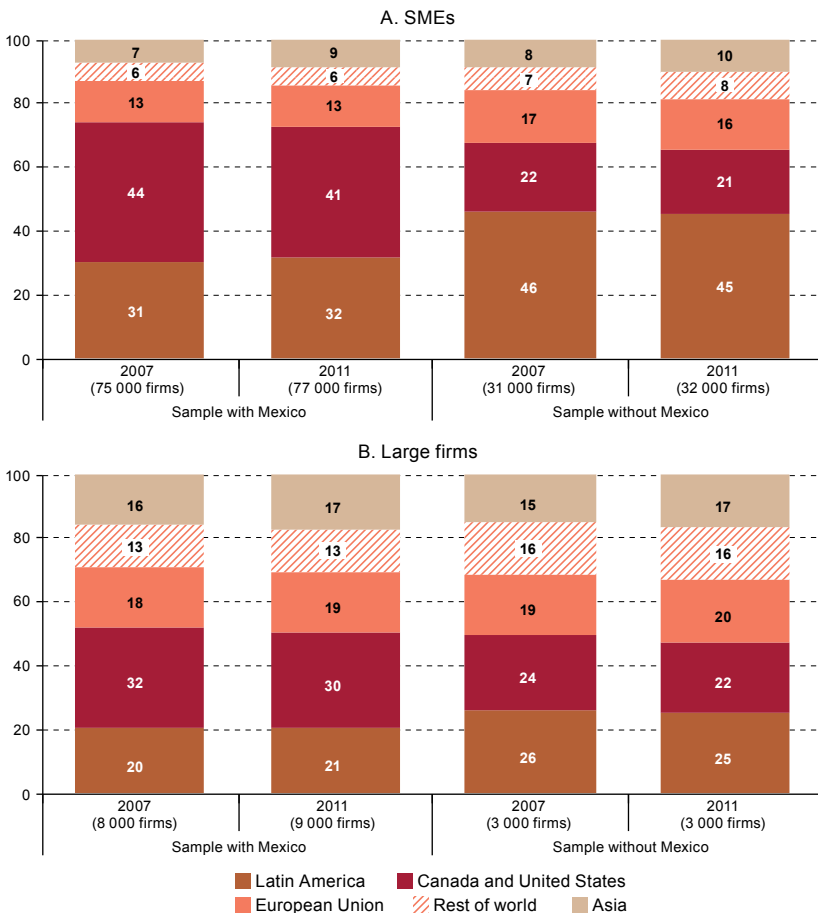
2. Relevance of Asia for exporting firms by size

For Latin American exporting SMEs, Asia is a less important destination than its own region and the United States. This is expected, as most small exporters tend to focus on neighbouring markets, which are easier to access in terms of culture, distance and language. Exporting to far-away destinations requires larger investments to overcome the aforementioned barriers, which is more difficult for SMEs. This assumption is confirmed by data on exporting SMEs from the samples of eight and seven countries

³ For example, in the same year the Republic of Korea and Spain had 123,128 and 109,172 exporting firms, respectively (Urmeneta, 2013).

(including and excluding Mexico). Figure II.2A shows the share of total exporting SMEs that sell to a particular market. In 2011, out of the sample of eight and seven countries, 73% and 66% of all exporting SMEs sold to Latin America and/or the United States, respectively, whereas only 9% and 10% exported to Asia. This contrast is even larger in terms of the value of total exports for the sample of eight countries: 79% of the value of exports went to Latin America and the United States and only 8% to Asia (see figure II.3).

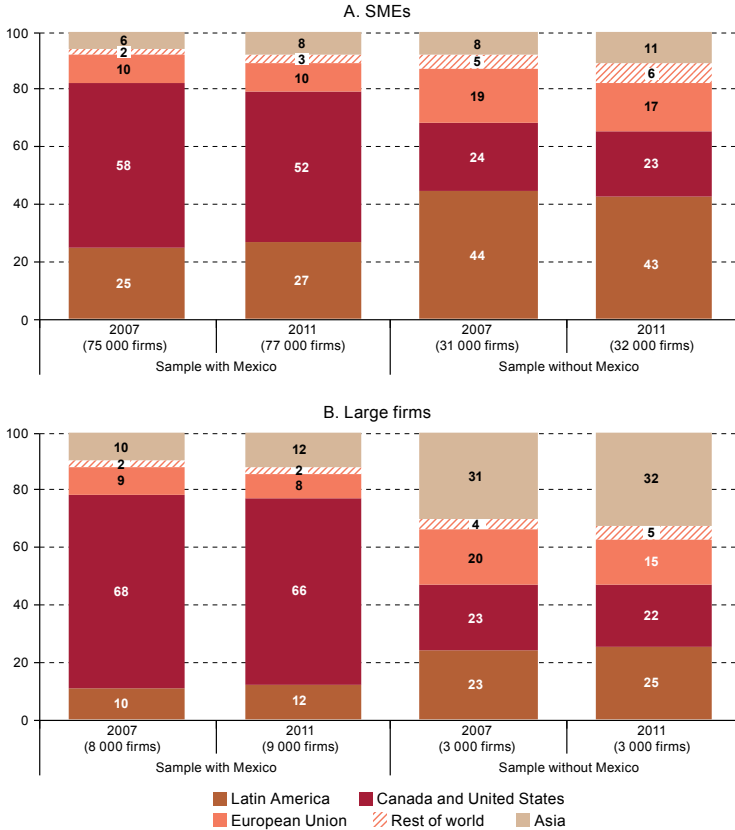
Figure II.2
Latin America (8 countries):^a share of SMEs and large firms
by export destination, 2007 and 2011
(Percentages)



Source: Authors' calculations, on the basis of customs data from each country.

^a The sample with Mexico includes eight countries (Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, the Plurinational State of Bolivia and Uruguay); the sample without Mexico covers seven countries. The sum of firms exporting to each of the five markets exceeds the total number of exporters, as some firms may export to more than one market.

Figure II.3
Latin America (8 countries):^a SMEs and large firms, share of export value by destination market, 2007 and 2011
(Percentages)



Source: Authors' calculations, on the basis of customs data from each country.

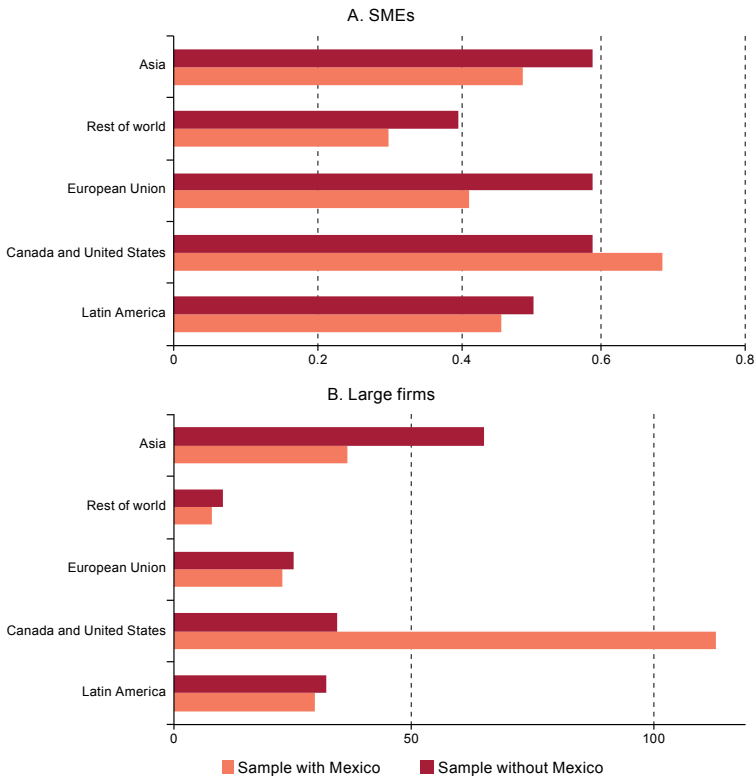
^a The sample with Mexico includes eight countries (Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, the Plurinational State of Bolivia and Uruguay); the sample without Mexico covers seven countries. The sum of firms exporting to each of the five markets exceeds the total number of exporters, as some firms may export to more than one market.

For the region's large exporters, Asia was proportionally more important than for the SME exporters. As illustrated in the same figures, 17% of all large exporters of the samples with and without Mexico sold to Asia in 2011. In terms of the total value of exports, however, there was a sharp contrast between the two samples. For the first sample, two thirds of all exports were directed to the United States and only 12% to Asia. For the second sample without Mexico, only 22% of exports went to the United States and 32% went to Asia. The latter result is strongly influenced by the large weight of Chile, for which Asia is the first export market.

Between 2007 and 2011, Asia increased as an export destination among both SME and large exporters. In this period, a two-percentage-point increase was observed in the share of exporting SMEs that sell to Asia. Moreover, the share of Asia in the value of total exports also rose slightly.

For the sample without Mexico, Asia represented the market with the highest average values of exports for both SMEs and large firms in 2011 (see figure II.4). In that year, an average large firm exported US\$ 65 million to Asia, versus only US\$ 33 million to Latin America and US\$ 35 million to Canada and the United States. For SME exporters, Asia was also one of the most important markets in terms of average foreign sales (around US\$ 600,000). When Mexico is added to the sample, Canada and the United States had the highest average firm value of exports, both for large firms (US\$ 114 million) and SMEs (about US\$ 700,000).

Figure II.4
Latin America (8 countries):^a average value of exports
by firm by destination, 2011
(Millions of dollars)



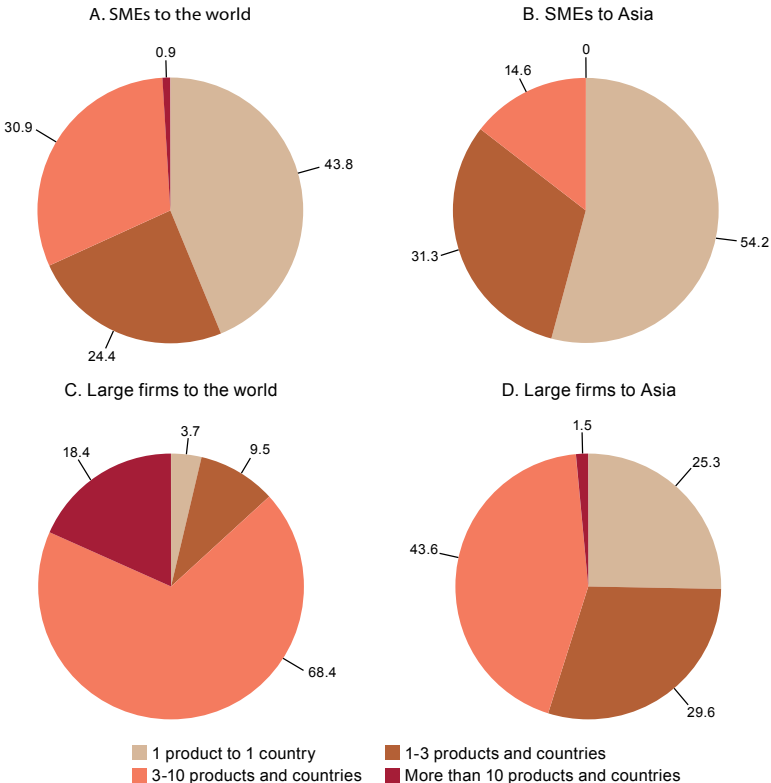
Source: Authors' calculations, on the basis of customs data from each country.

^a The sample with Mexico includes eight countries (Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, Plurinational State of Bolivia and Uruguay); the sample without Mexico covers seven countries.

3. Number of products and destinations, by company size

Exports by both small and large Latin American companies to Asia are more concentrated than those to the world as a whole. For the sample of eight countries (Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, the Plurinational State of Bolivia and Uruguay), the number of products and export destinations for the world and Asia were analysed according to company size. As expected, the exports of large firms are more diversified in terms of products and destination countries than those of small firms. In 2011, 44% of the sample's SMEs exported a single product to a single destination in the world, whereas 54% of all SMEs exported one product to one destination in Asia (see figure II.5). In the case of large companies, a mere 4% exported one product to one destination to the world. Meanwhile, a quarter of their exports to Asia are concentrated in one product and one destination (see figure II.5).

Figure II.5
Latin America (8 countries):^a SMEs and large firms,
share in number of products by destination, 2011
(Percentages)



Source: Authors' calculations, on the basis of customs data from each country.

^a The eight countries are Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, the Plurinational State of Bolivia and Uruguay.

In 2012, exports to Asia by SMEs in the sample of seven countries included wine, grapes, frozen fish and fruit-based products. Exports by large firms were largely dominated by mining and food products in 2012. The top two exported products by large firms (which are based in Chile) accounted for 45% of total exports in 2012. The product concentration of SMEs was lower than that of large firms (see table II.2).

Table II.2
Latin America (7 countries):^a SMEs and large firms,
top 10 products^b exported to Asia, 2006-2012
(Millions of dollars)

	2006	2007	2008	2009	2010	2011	2012
A. SMEs							
Wine	28	36	40	40	45	46	48
Fresh grapes	21	18	21	22	26	32	32
Frozen fish	16	15	18	16	13	17	26
Apricots, cherries, peaches and plums	9	9	11	13	16	20	23
Other fresh fruits	6	6	6	6	7	11	16
Coffee	6	8	12	14	14	15	15
Iron and steel scrap	4	7	14	12	12	13	12
Sawn timber	10	15	11	9	12	15	11
Molluscs	8	7	7	5	12	13	9
Aluminium scraps	4	6	6	7	8	8	9
Ten products as a percentage of total exports	12%	12%	13%	13%	11%	10%	10%
B. Large firms							
Copper minerals and concentrates	8 270	10 625	9 714	5 812	10 143	11 768	13 282
Refined copper and copper alloys	4 446	8 392	8 724	9 684	14 372	15 525	12 627
Copper, unrefined	597	609	586	590	866	1 516	2 531
Chemical wood pulp	700	1 303	1 397	1 356	1 287	1 608	1 460
Iron ore	311	382	517	540	1 076	1 575	1 230
Integrated electrical circuits	1 096	1 348	945	791	560	913	1 142
Frozen fish	585	548	644	733	759	1 147	982
Soy beans	17	13	33	51	164	117	565
Molybdenum minerals	761	1 067	1 007	642	578	564	541
Swordfish	273	241	272	267	324	458	438
Ten products as a percentage of total exports	83%	85%	82%	82%	84%	86%	87%

Source: Authors' calculations, on the basis of customs data from each country.

^a The seven countries are Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Plurinational State of Bolivia and Uruguay.

^b A product is defined as a four-digit code of the Harmonized Commodity Description and Coding System. The order of the products matches their value of exports in 2012.

The number of products exported by both SMEs and large companies to the world and Asia was relatively similar (see table II.3). Exports to ASEAN countries included more products and companies than exports to larger Asian economies such as China and Japan. As such, there seem to be more opportunities for SMEs to export to ASEAN

than to larger Asian countries (Urmeneta, 2013). A few large companies based in almost every Latin American country concentrated their exports to the Asian giants. For example, in 2010, China accounted for more than 80% of exports of three Colombian export companies (Ecopetrol S.A. with 52.8%, Meta Petroleum Corp. with 15.4% and Cerro Matoso S.A. with 12.3%).

Table II.3
Latin America (7 countries):^a SMEs and large firms,
number of products^b exported to the world and Asia
(Number)

	2007	2008	2009	2010	2011
To the world:					
All companies	1 285	1 262	1 257	1 263	1 249
Large companies	1 204	1 194	1 199	1 193	1 194
SMEs	1 269	1 245	1 235	1 247	1 235
To Asia:					
All companies	1 004	984	992	997	1 021
Large companies	833	827	847	864	870
SMEs	854	830	834	830	863

Source: Authors' calculations, on the basis of customs data from each country.

^a The seven countries are Chile, Costa Rica, Ecuador, El Salvador, Guatemala, the Plurinational State of Bolivia and Uruguay.

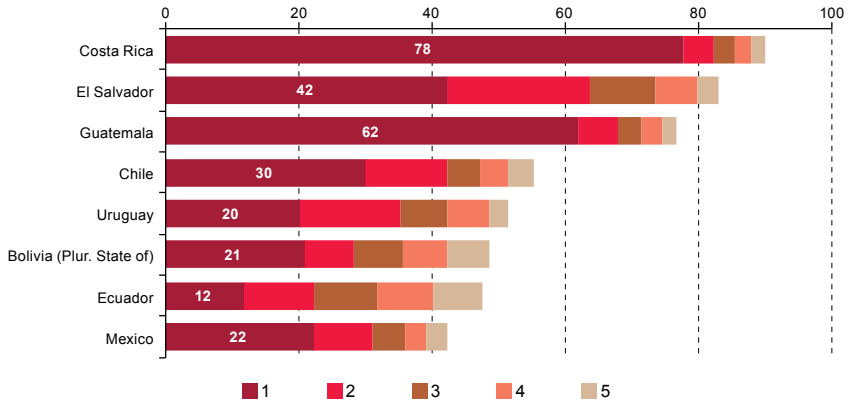
^b A product is defined as a four-digit code of the Harmonized Commodity Description and Coding System.

C. Concentration, rotation and intensive versus extensive margins of exporting firms

The export firms' dynamics can also be illustrated by three other indicators related to the concentration of shipments, the rotation of firms and intensive versus extensive margins. With respect to the firm concentration of exports, shipments to Asia, in particular to the larger economies, are concentrated in fewer companies than those to other parts of the world. This is illustrated by the share in exports to China of the five largest companies from each of the eight countries of the sample in 2011. On average, these five main exporters accounted for 62% of total shipments to China. The majority of the large companies exported commodities except in Costa Rica, where the largest company, Intel, exported high-technology products to China (with 78% of shipments in 2011) (see figure II.6).⁴

⁴ However, the decline in global demand for its products led Intel to close its production facility in Costa Rica in 2015, while maintaining its research lab in this country.

Figure II.6
Latin America (8 countries):^a share of five largest firms
in exports to China, 2011
(Percentages)



Source: Authors' calculations, on the basis of customs data from each country.

Note: The numbers 1 to 5 indicate each of the top five firms and their percentage share of exports to China.

^a The eight countries are Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, the Plurinational State of Bolivia and Uruguay.

The concentration of exports in a few companies is also reflected in the concentration of exports in terms of products. This can be verified with the Herfindahl-Hirschman Index, which in 2013 was 0.18 for total exports from the region to the world, while its value to Asia was 0.3.⁵

A second indicator illustrates the rotation of companies, meaning the percentage of companies that enter, exit or remain in a market within a given year or period. This is analysed according to firm size and export destination. From 2008 to 2011, the rotation of SMEs and large firms exporting to Asia was higher than those exporting worldwide. Moreover, during this period, the rate of entry of SMEs and large exporters into the Asian market was greater than the number of firms leaving. That means that despite the high turnover, the number of exporters to Asian markets increased (see figure II.7). For example, from 2007 to 2012, the number of SMEs exporting to Asia in the four Latin American countries for which 2012 data are available (Chile, Costa Rica, El Salvador and Uruguay) increased by 26% from 5,200 to 6,600. This high growth rate was not observed for any other destination around the world.

⁵ The value of the index goes from 0 to 1, where a larger value indicates a greater concentration.

Figure II.7
Latin America (8 countries):^a rotation of SMEs
and large export firms, 2007-2011
(Percentage of total number of firms in 2007)

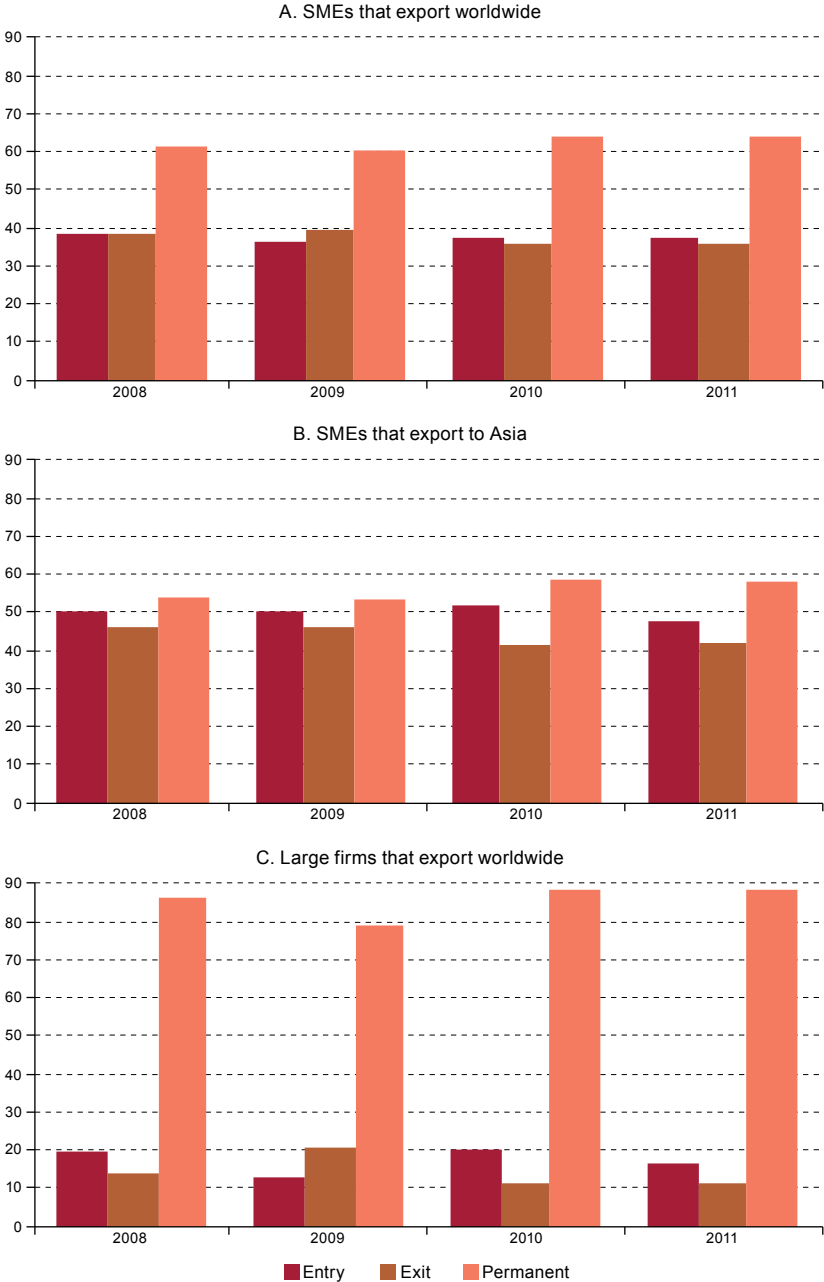
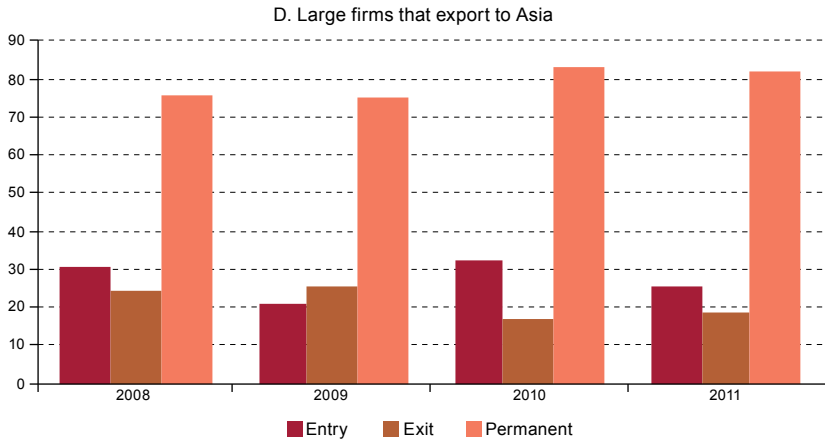


Figure II.7 (concluded)



Source: Authors' calculations, on the basis of customs data from each country.

^a The eight countries are Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, the Plurinational State of Bolivia and Uruguay.

In 2011, the rate of firms exporting to the Asian market for the first time fell, which could point to a possible stagnation in the number of Latin American exporters. This trend seems to be confirmed by aggregate country data on the number of exporters between 2012 and 2014.

A third indicator explains annual variations in aggregate export values by the underlying firm dynamics. On the one hand, a variation in the value of exports may be due to a change in the exports of existing companies (intensive margin). On the other hand, this variation could also be related to the entry of new exporters (extensive margin) or the exit of firms that exported in the previous year (trade destruction).⁶ In short, the aim is to analyse whether variations (or margins) in total export amounts are due to new companies entering the market or any changes in shipments from existing exporters.

The results confirm a differential behaviour between SMEs and large firms in the period from 2007 to 2012. In general, the intensive margin (that is, variations in shipments of the same companies) explained most of the variations in both exports to the world and exports to Asia. However, the intensive margin is more important for explaining variations in export earnings for large companies than for SMEs. Another interesting result is that the extensive margin was relatively more significant for SME exports to Asia, in combination with the destruction of exports. The annual entry and exit rates of SMEs exporters to Asia were higher than those rates of

⁶ For more details on intensive and extensive margins applied to products instead of firms, see Berthelon (2011).

their peers exporting to other parts of the world. Another finding is that in the case of SME exports to the world, the incorporation of new exporters played a countercyclical role during the crisis of 2009 (see figure II.8).

Figure II.8
Latin America (7 countries):^a annual variations in aggregate export values by firm dynamics, 2006-2012
(Percentages and millions of dollars)

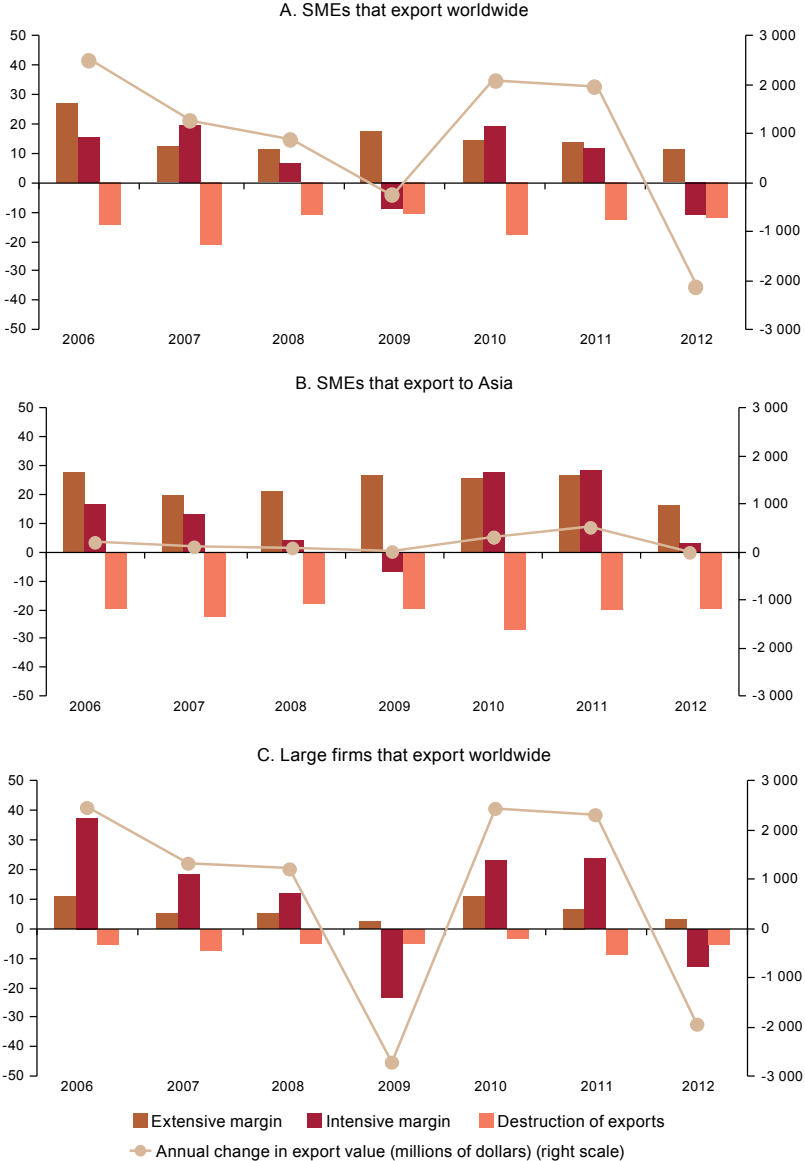
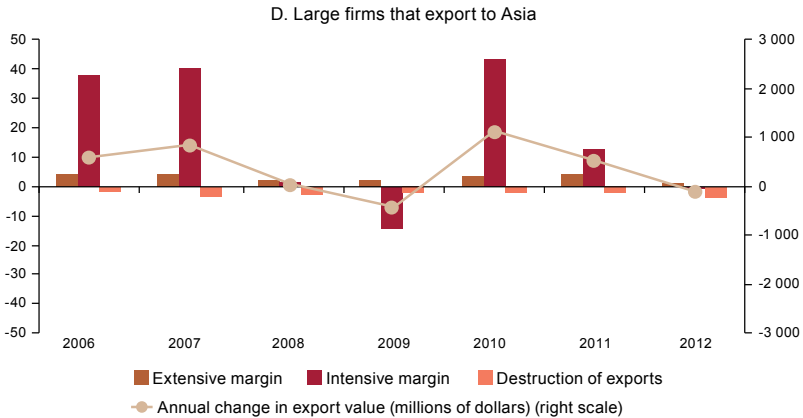


Figure II.8 (concluded)



Source: Authors' calculations, on the basis of customs data from each country.

^a The seven countries are Chile, Costa Rica, Ecuador, El Salvador, Guatemala, the Plurinational State of Bolivia and Uruguay.

D. Examples of small Latin American exporters to Asia

Among regional SMEs that export to Asian countries, food exporters are especially relevant. Some of these SMEs have introduced innovations to adjust their products to meet the requirements of consumers, importers and import regulations in Asian markets. The following section describes three successful cases that illustrate the importance of supporting activities, logistics and the flexibility required to meet these demands.⁷

1. Argentina: Cooperativa Agrícola Tampera de James Craik Ltda. and Masua S.A.

The company Cooperativa Agrícola Tampera de James Craik Ltda. from Córdoba, through its brand El Craikense, started to export powdered milk to China in 2014, after several failed attempts. The process required several years of preparation, starting with an important technological upgrading in 2005 to turn their product from liquid into powder. The Argentine Department of Agriculture and Under-secretariat of the Dairy Industry facilitated the company's participation in commercial missions and fairs. They also assisted with training sessions and eased the reception of the working capital rotating fund, which is managed by the Intercooperative Board of Milk Producers.

⁷ More information can be found on the websites of the respective export promotion institutions (ProChile, PROCOMER and ProMendoza).

Another family company, Masua SRL from Tunuyan, which belongs to the agricultural group La Emilia S.A., sold 15 containers of fresh pears (705 tons) to Hong Kong Special Administrative Region of China in 2014. In the past few years the company has been working with the ProMendoza Foundation to export its products. The process began with their participation in the Asia Fruit Logistica fair, where they made initial contacts with buyers. After negotiations with buyers about supply requirements, the company received logistical support that enabled the initiation of shipments.

2. Costa Rica: Natural Sins, Surá Green and Sweetwell

The Export Promotion Agency of Costa Rica (PROCOMER) assisted two domestic companies in penetrating the Asian market by targeting specific niche markets: Natural Sins, which exports fruit and vegetable snacks to Japan, and Surá Green, which exports bananas to China.

Natural Sins worked with a Japanese consultant for PROCOMER, who assisted in the exporting process. The company had to adapt its products for Asian markets and improve its logistical support (with respect to transport, regulations and delivery mechanisms). Sales representatives attended industry-specific fairs, such as FOODEX, to promote their products to Asian buyers. This led to the first container of coconut, pineapple, mango, beetroot, apple and orange snacks being shipped to a Japanese customer in 2013.

In the case of Surá Green, PROCOMER facilitated meetings with potential customers in Beijing in October 2012 in the context of the China-Latin America Business Summit. Surá Green holds certifications such as the Rainforest Alliance, Global Gap, GRASP, ISO 14001:2004 and ISO 9001:2008. The company also obtained an ISO 14064:2006 certificate, becoming the first carbon neutral banana producer in Costa Rica. As in the case of Natural Sins, support from PROCOMER was key in assisting the company to find packaging design suppliers, interpreting and translating services and consultants on tariffs and export procedures.

The Sweetwell case was different. This small company produces sweeteners and sugar-free products (including jams, beverages and chocolate). In 2012, it began to expand its sales throughout Central America (Wal-Mart supermarkets) and into Colombia (Alkosto supermarkets) and Peru (Niche stores). The company also entered the Indian market late that year, but shipments were suspended owing to lack of credit and financing. The company executives are now considering an alternative, namely, removing the business from Costa Rica, selling the recipes and property rights in exchange for a royalty and building a new factory in India. (*El Financiero*, 2014).

3. Chile: Elkan wine

In recent years, a number of innovative wine companies have emerged in Chile that are interested in exporting to Asia. One example is Casa Verdi Winery, which has developed quality wines packaged in aluminium cans. With the support of winemakers and Rexam (a global can manufacturer), the company has been able to conduct research on the durability, strength and quality of its products. The result has been the development of a new product, Elkan, a canned wine that allows successful ageing, as the use of an airtight aluminium container prevents oxidation. This ensures that the wine can last for more than three years and also has other practical and environmental benefits.

The product was launched in 2007 under the name Elkan, which means mysterious or secret in Mapudungun, the language of the Mapuche, one of the major ethnic groups from south-central Chile. Based on a market study, the company chose Asia as the first target region in which to sell the product. Today this canned wine is sold in 16 countries in Latin America, Europe, Africa and Asia, gaining more followers every day due to the quality and versatility of the canned product.

The canning factory was inaugurated in 2009. It has an annual packaging capacity of 6 million cans (250 ml and 375 ml) and processes Cabernet Sauvignon, Sauvignon Blanc and Rosé wines. The company benefited from the ProChile Export Promotion Contest, which gave it a wider dissemination in Asian markets. According to the company's executives, because the Asian region is a new market for wine consumption, it is not prejudiced towards this type of packaging; on the contrary, the cans are seen as very convenient, lightweight and easy to store.⁸ This project has enabled the company to grow into a medium-sized company.

E. Conclusions and some future challenges

This chapter has analysed micro-level customs data from eight Latin American countries between 2007 and 2012 in order to characterize the role of SMEs in regional exports to Asia and to the rest of the world. Some results stand out. First, the number of exporting companies in the region was low (less than 1% of the total), and the proportion of SMEs that export is even lower. In most Asian countries, these shares are between 10 to 30 times higher (ECLAC, 2014). Second, the rotation of all types of firms exporting to Asia was higher than to the rest of the world. Third, the

⁸ For more information, see Empresa Exterior, "La chilena Viña Elkan exporta vino en lata hacia el mercado asiático", 18 February 2008 [online] <http://empresaexterior.com/not/11527/la-chilena-vina-elkan-exporta-vino-en-lata-hacia-el-mercado-asiatico/>.

turnover rate of exporting SMEs is higher than that of large enterprises. In the case of SMEs, around 50% of new companies started to export to the Asian market every year, while around 40% left the market. Fourth, most of the annual changes in the value of shipments to the world and to Asia during this period were explained by a variation in the amounts exported by existing companies (intensive margin). However, in the case of SMEs exporting to Asia, the extensive margin is more important than typical markets in the rest of the world. Moreover, the extensive margin was much more important for SMEs than for large firms, especially in the Asian markets. This calls for policies to reduce the high exit rate of SMEs from the Asian market. Fifth, the key to the success of Latin American SMEs that export to Asia lies in the assistance and support provided by export promotion agencies. These agencies provide economic support, transfer knowledge and facilitate foreign exports.

Sixth, SMEs have a major weakness in that they typically sell only one product to one Asian destination, which makes them very sensitive to any event that could cause them to exit the market. In this context, programmes are required to enable exporting SMEs to diversify their products and export destinations. In addition to the challenges of distance, lack of knowledge and cultural differences, SMEs face difficulties relating to logistics, given the high transportation costs between the two regions (low density of direct air and sea transport), and the complexity of customs procedures. In addition, there are high tariffs on many agricultural products (over 20% in all ASEAN countries) and manufactured products based on natural resources, with the latter being of particular interest for Latin America.

Despite these difficulties, Latin American companies and governments should prioritize Asia as an export destination because of its rapid growth and demand potential. It is therefore important to better analyse the characteristics of this relationship and any potential policy improvements that could promote further growth in bilateral trade, employment generation, a more diversified export structure and greater SME involvement. The region should make an effort to improve its export base, expand export capacity and deepen the characterization of the agents that perform these shipments.

However, increased trade does not necessarily mean more integrated productive development. Achieving this goal requires expanding the involvement of SMEs, which, in turn, requires that SMEs improve their productivity and increase their participation in international trade by exporting either directly or indirectly as suppliers of (large) exporting companies. The countries of the region should promote these processes through a joint effort by the public and private sectors, including

universities, and appropriate coordination between trade policy and productive development policy. Greater complementarities between SMEs and large regional trans-Latin firms could be sought. This strategy should achieve the generation of greater linkages between large trans-Latin firms and SMEs, together with the increased role and diversification of SMEs that export directly.

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Chapter III

Asian investors and their small and medium-sized suppliers in Chile

Hyuk Ju Kwon¹

Introduction

In 2013, Chile was the third largest recipient (after Brazil and Mexico) of foreign direct investment (FDI) inflows in Latin America and the Caribbean. From 2001 to 2013, the FDI stock in Chile increased almost fivefold, from US\$ 43 billion to US\$ 215 billion (ECLAC, 2014). A large share of inward FDI is motivated by Chile's abundant natural resources, in particular copper, fisheries and forestry. According to ICSG (2014), Chile was the world's leading copper producer, accounting for almost one third of global production. Forestry is the second-largest source of export earnings, accounting for about 8% of total exports from 2008 to 2013 (Central Bank of Chile, 2014). Other factors that have contributed to Chile's successful FDI attraction are its macroeconomic stability, investments in infrastructure, trade facilitation and the existence of free trade agreements with more than 30 countries (DIRECON, 2014).

¹ The author is grateful to the Chilean Economic Development Agency (CORFO), Eagon Lautaro S.A. and KIMICA Chile Limitada for their collaboration and to Roberto Urmeneta and Jieun Park for their assistance.

Over the last decade, Asian FDI into the country grew significantly, accounting for 20% of total inflows, while two decades ago its participation was a mere 3%. This FDI is mainly directed to the natural resources sector and is driven by the surging demand for these products from Asian countries, which reflects high economic growth and dependence on imports in these countries. Several Asian companies have entered the country to extract natural resources and transfer them back home in raw or processed form. For example, exports of forestry products from Chile to Asia grew 3.9 times between 2003 and 2013, while exports to the rest of the world increased only 1.4 times (Central Bank of Chile, 2014).

The microeconomic benefits of FDI for the Chilean economy depend largely on the production linkages between foreign subsidiaries and domestic firms. The latter are predominantly small and medium-sized enterprises (SMEs), which can account for up to 99% of firms and nearly 80% of all jobs. These production linkages allow for the transmission of technology and knowledge from large foreign corporations to small domestic firms. Many studies find that SME suppliers to large exporters or direct SME exporters show higher productivity growth than their peers selling only to (firms in) the domestic market (Bernard and Jensen, 1999; Delgado, Farinas and Ruano, 2002; Aw and Hwang, 1995; Castellani, 2002; Kraay, 1999; Clerides, Lach and Tybout, 1998; Bernard and Wagner, 1997; Wagner, 2002; Álvarez, 2002). Therefore, the participation of SMEs in export production networks led by multinational corporations (MNCs) can be a powerful tool to improve their performance.

The establishment of production linkages between MNCs and SMEs is challenging, however, because of the low productivity of the latter, which stems from a lack of access to modern technologies, quality certifications and credit. In a context of insufficient qualified domestic providers, MNCs often import the necessary parts or technology. Public-private interventions can help to upgrade SME suppliers and link them up with MNCs. For example, the Chilean Economic Development Agency (CORFO) supports productivity growth in SMEs by cooperating with MNCs through its Supplier Development Programme (SDP).

Based on the foregoing, this chapter has two objectives. First, it reviews the experience of two Asian firms that have established manufacturing plants that process natural resources in Chile, with a focus on their relationship with domestic suppliers. Second, it documents some results of the CORFO SDP, with some references to the natural resource sector.

The chapter is organized into four sections. Section A provides background information on recent Asian trade and FDI in Chile. In section B, case studies are presented on two Asian companies (Eagon Lautaro S.A. and KIMICA Chile Ltda.), which invested in the country's natural resource sector. Section C describes a supplier development programme in Chile that aims to enhance the productivity of SMEs by forging linkages with large companies. A final section presents some conclusions and policy recommendations.

A. Background

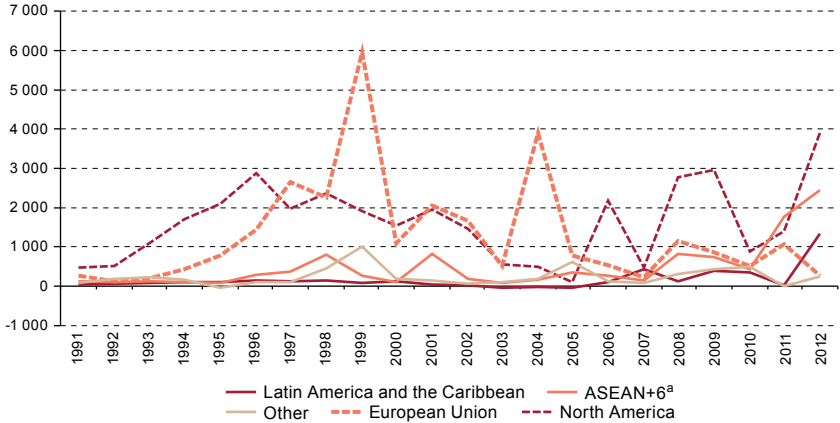
Since the early 2000s, Asian FDI in Chile has recorded an increasing trend, reaching US\$ 2.5 billion in 2012 (see figure III.1.A). The investment stock between 2003 and 2012 amounted to US\$ 7.3 billion. Historically, North America and Europe have been the main origins of FDI, however, in the late 2000s, Asian investors began to gain ground. Australia and Japan have been the leading Asian investors in Chile, together accounting for nearly 97% of total Asian investments in the country (CIE Chile, 2015). In terms of FDI by industry, the mining sector captured 84% of all inflows between 2003 and 2012, followed by small shares for electricity, gas and water and engineering and business services (see figure III.1.B).

The concentration of Asian FDI in mining is mirrored in the composition of Chilean exports. In 2013, almost half of Chilean exports were directed to Asia, which was by far the largest destination market (see figure III.2). This reflects substantial growth since 2004, when Asia's share in Chilean exports was 36%. Exports to Asia are concentrated in minerals, which accounted for 78% of the total in 2013. As a result, Asia is also the largest importer of Chilean copper and forestry products, receiving 67% of copper exports and 22% of total silviculture products (Central Bank of Chile, 2014). Within Asia, China is the biggest buyer of Chilean products: the country absorbed one quarter of Chilean exports in 2013.

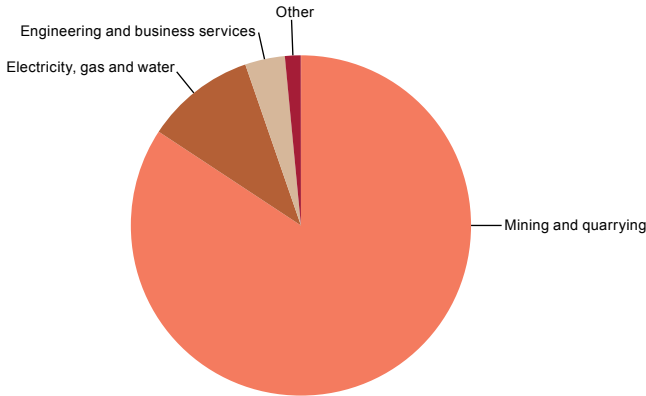
The participation of Chilean SMEs in exporting activities is quite low compared with other countries in the region. The percentage of small and medium-sized companies that exported directly or indirectly was 4.4% and 12.4%, respectively (see figure III.3). In the region, Colombia has the highest share of medium-sized companies engaged in exports, while Argentina has the largest number of small exporters.

Figure III.1
Chile: foreign direct investment inflows by geographical origin and sector of destination, 1990-2012
(Millions of dollars and percentages)

A. Geographical origin of FDI inflows, 1990-2012
(millions of dollars)



B. Destination sector of cumulative Asian FDI flows, 2003-2012
(percentages)

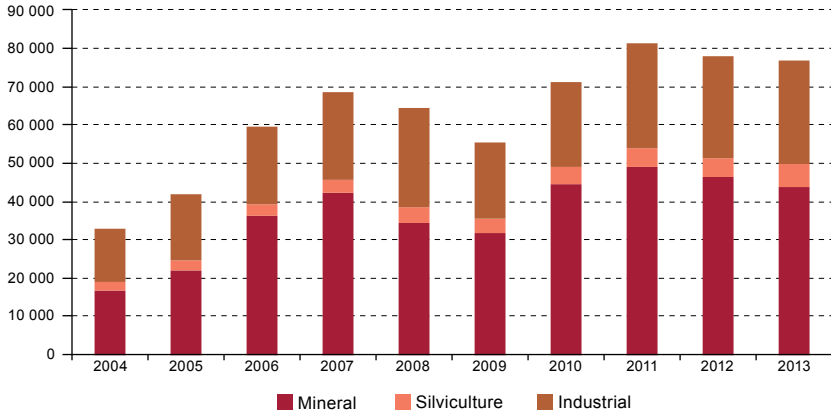


Source: Prepared by the author on the basis of Foreign Investment Committee (CIE Chile), "Foreign direct investment under D.L. 600 inflows & outflows: 1974-2012", 2015 [online] <http://www.ciechile.gob.cl/en/inversion-en-chile/estadisticas/>.

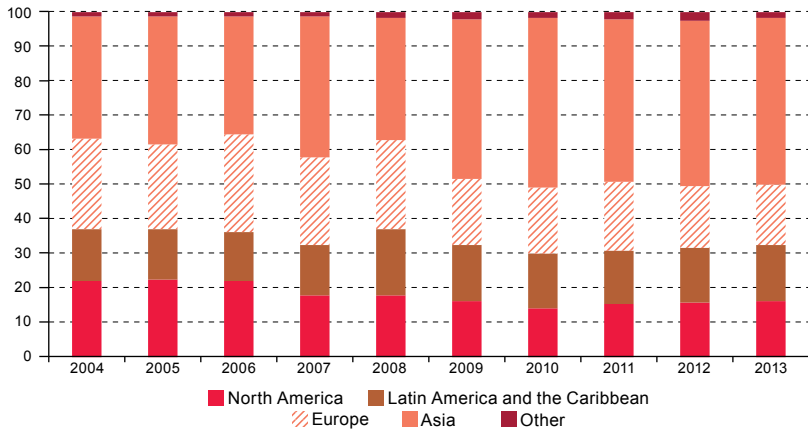
^a Includes the member States of the Association of Southeast Asian Nations (ASEAN), plus Australia, China, India, Japan, New Zealand and the Republic of Korea.

Figure III.2
Chilean exports: product composition and destination markets, 2003-2013
(Millions of dollars and percentages)

A. Product composition
(millions of dollars)

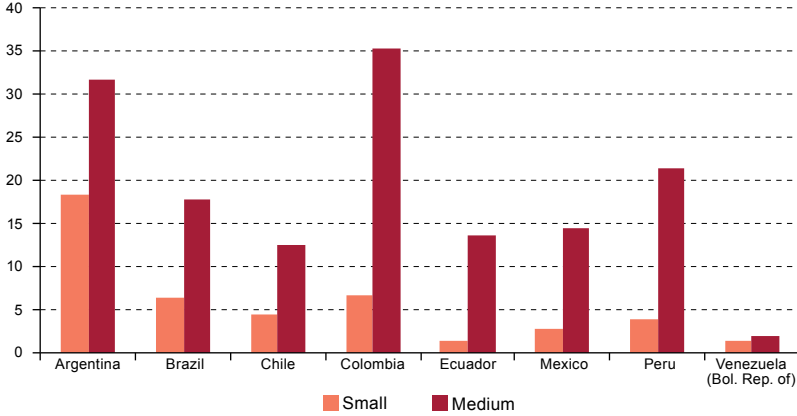


B. Destination markets
(percentages)



Source: Prepared by the author on the basis of data from the Central Bank of Chile [online] <http://www.bcentral.cl>.

Figure III.3
Latin America (selected countries): share of small and medium-sized firms exporting directly or indirectly (at least 1% of sales), 2010
(Percentages)



Source: Prepared by the author on the basis of data from World Bank, Enterprise Survey, 2014.

Chile seeks to improve the productivity of SMEs and promote their exports by providing access to loans for technology upgrading, worker training and export promotion. This is done through institutions such as CORFO, the National Training and Employment Service (SENCE) and the Export Promotion Bureau (PROCHILE). Another mechanism for SME upgrading through possible knowledge transfer is participation in the supplier networks of MNCs in Chile. This is also promoted by the government, for example through the CORFO Supplier Development Programme, which is presented below.

B. Case studies

This section presents case studies of two Asian firms that have been present in Chile for more than two decades. Each case looks into the firm’s motivations for investing in Chile, the development of their business in the country and the links with their suppliers.

1. Eagon Lautaro S.A.

Eagon Industrial was established in 1972 and is now one of the Republic of Korea’s largest plywood manufacturers. In the Korean market of plywood production, Eagon had a 28% market share in 2013 among the domestic players. Eagon had less than 300 employees at home. It has nine affiliates abroad, including branches in Chile, the Solomon Islands and the United

States, mainly to secure access to raw materials for its plywood production and also to service the global market.

Eagon has diversified its business by creating affiliates in energy, environmental products and window manufacturing, which were spun off from its main business. For example, Eagon Environment recycles woodchips from the plywood manufacturing process to make pallets for forklift trucks. Eagon Energy, another affiliate, supplies electricity that is generated by burning woodchips to create steam. In addition to plywood, the company and its affiliates produce building materials, doors, floors, windows, solar panels and wood products.

In response to concerns in the 1980s about the future supply of wood, its major raw material, Eagon started to invest in forest cultivation abroad. Its first foreign undertaking was in a forest plantation in the Solomon Islands in 1983. However, since trees take at least 20 years to mature, it also needed to invest in other countries with existing forests. The companies preselected Chile and New Zealand for their quality woods, but ultimately opted for the former because of its lower labour and capital costs.

Eagon took over an existing company, Embalajes San Felipe Ltda., in southern Chile in 1993 and renamed it Eagon Lautaro.² Eagon chose this company in part because of its location next to a strategic highway that facilitated the transport of plywood to the port. The main goal of the Chilean subsidiary was to supply veneers, the intermediate product for producing plywood, to headquarters in the Republic of Korea. In the four years following the acquisition of the local company, the monthly export volume steadily increased from 400 cubic metres to 5,000 cubic metres.

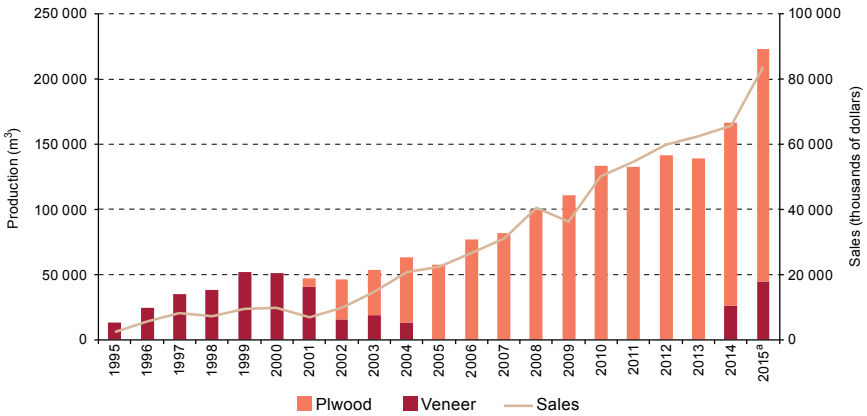
In the late 1990s, Eagon Lautaro survived the Asian financial crisis thanks to the diversification of its export markets. However, the slump in Asia's construction industry and a significant depreciation of the Korean currency (won) led to a reduction in the parent company's demand for the wood veneers of its Chilean subsidiary. This shock forced Eagon Lautaro to redirect its exports to other markets, such as Mexico and the United States. These countries had substantial demand for this product, and exports were facilitated by free trade agreements concluded with Mexico in 1999 and with the United States in 2004.

This new export diversification strategy turned out to be successful. Eagon Lautaro upgraded its production by installing equipment to turn veneer into plywood in 2000 and started to export

² *Embalajes* means packaging. Lautaro is the town where the company is located.

this product in 2001. The knowledge for this process was easily transferred from headquarters to the Chilean subsidiary. In short, although annual sales faced a slump from 1999 to 2002, they recovered strongly from 2003 onward. Also, the company gradually ceased selling veneer from 2000 to 2005 owing to an increase in plywood exports to various countries (see figure III.4). In a context of growing import demand, Eagon Lautaro’s production capacity expanded to 13,000 cubic metres per month in 2007 and 2008. However, the global financial crisis in 2009 caused a significant temporary drop in sales.

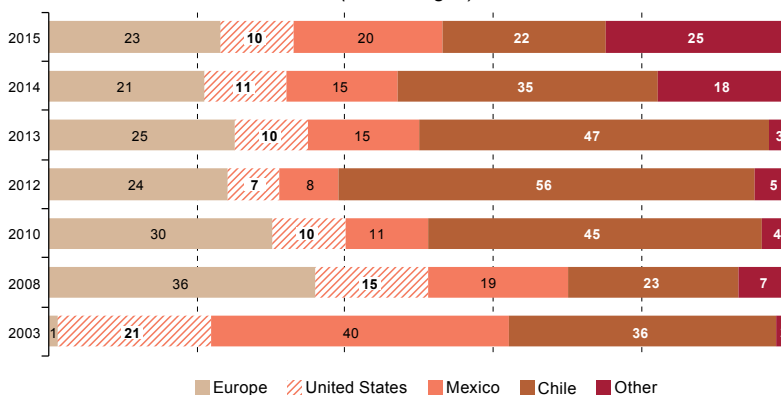
Figure III.4
Eagon Lautaro: production and sales of plywood and veneer, 1995-2015
(Cubic metres and thousands of dollars)



Source: Prepared by the author on the basis of data from Eagon Lautaro.
^a The figures for 2015 are projections.

In February 2010, a massive earthquake that hit Chile turned out to be an opportunity for Eagon Lautaro to compensate the drop in exports with domestic sales. Fortunately, the company did not suffer any major losses from the earthquake and was able to restart production within a week after the disaster. In contrast, its competitors suffered major damage. Domestic sales increased because of the demand from reconstruction work, and Eagon Lautaro was one of the few companies in the region capable of meeting this demand. In the years following the earthquake, its sales in Chile accounted for almost half of the company’s total sales (see figure III.5). By 2014, Eagon had exported to 13 countries (Argentina, Australia, Belgium, Germany, Italy, Mexico, the Netherlands, New Zealand, Spain, Portugal, the Republic of Korea, Turkey and the United States).

Figure III.5
Eagon Lautaro: sales by destination, 2003-2013
 (Percentages)



Source: Prepared by the author on the basis of data from Eagon Lautaro.

Eagon has managed to maintain its competitiveness in the global plywood market in part by moving production from the Republic of Korea to Chile. In 2013, Eagon Lautaro produced 139,000 cubic metres of plywood, while the parent company's production in the Republic of Korea was only 123,000 cubic metres. Although plywood was one of the Republic of Korea's main export products in the 1970s, the competitiveness of wood products at home has decreased over time. As plywood continues to be a major part of Eagon's global business, the management has gradually transferred production to Chile. In this country, Eagon Lautaro has become the third largest plywood manufacturer (see table III.1). In 2013, the company employed 523 workers and recorded US\$ 63 million in sales.

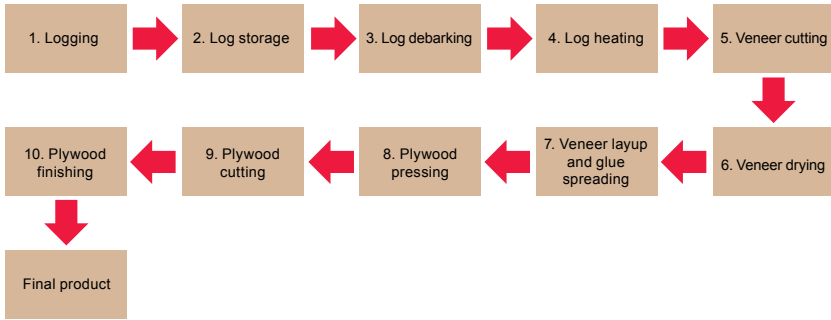
Table III.1
Chile: installed capacity of main plywood producers, 2014
 (Cubic metres)

Company	Installed capacity
CMPC Maderas S.A.	500 000
Paneles Arauco S.A.	350 000
Eagon Lautaro S.A.	150 000
Paneles Angol S.A.	96 000
Tulsa S.A.	88 900
Industrias Río Itata II S.A.	60 000
Infodema S.A.	45 000
Maderas Prosperidad Ltda.	18 000
Villafranca Oliver Chile Ltda. Forestal & Maderera	15 600
Shin Gwang Forestal Chile S.A.	14 000
Laminadora Los Ángeles S.A.	8 600

Source: Prepared by the author on the basis of Instituto Forestal (INFOR), "Anuario forestal, 2014", *Boletín Estadístico*, No.144, Santiago, Chile 2014.

Eagon Lautaro’s plywood value chain is composed of several segments. The company buys logs from wood producers, purchasing roughly one third from two large companies (Hancock and Arauco) and the other two thirds from SMEs. The company buys the logs from its suppliers and stores them on its premises. After several processing stages, Eagon sells the plywood to construction companies at home and abroad, which use the products for floors and walls (see diagram III.1).

Diagram III.1
Eagon Lautaro: value chain of plywood production, 2014



Source: Prepared by the author on the basis of the United States Environmental Protection Agency (EPA) (1995), *EPA Office of Compliance Sector Notebook Project - Profile of the Lumber and Wood Products Industry* (EPA/310-R-95-006), Washington, D.C., United States Government Printing Office, 1995, and interviews conducted with staff at Eagon Lautaro.

According to the management, finding suppliers that meet Eagon’s requirements and comply with international certification standards is essential to maintain its reputation in the world market as a sustainable producer selling a high-quality product. For this purpose, the quality of the wood and compliance with certain certification standards are key elements of the negotiations with suppliers. To sell a certified end product, Eagon needs its suppliers to adhere to these standards. In particular, they need to comply with the Forest Stewardship Council (FSC) certification, which covers principles with regard to tenure and user rights and responsibilities, indigenous peoples’ rights, community relations, workers’ rights, environmental impact, monitoring and assessment and maintenance of high conservation value forests. Another required certification is the FSC Chain of Custody, which certifies that forest products are handled in the value chain by accredited manufacturers, processors and traders of forest products. These certifications are required by some importers, in particular the European Union.

To increase the number of its SME wood suppliers with FSC certification, the company initiated a supplier development programme

(SDP) with financial support from CORFO in 2007. Through this programme, Eagon transfers its knowledge and technical expertise in managing forests according to FSC standards, which helps its suppliers acquire FSC certification in the future. The participants in the SDP programme are all SMEs, including not only current suppliers but also other small forestry businesses in the region. Eagon managers in charge of the SDP conduct regular training sessions and visit the suppliers periodically. They educate the suppliers on how to seed, manage the forest until maturity, contain diseases and cut down the trees according to FSC standards. This promotes sustainable practices among all the suppliers in the region, beyond those of Eagon, and allows them to sell logs at a higher price.

According to interviews with SME suppliers, they seem satisfied with their relationship with Eagon, especially in terms of the learning opportunities they have had to improve their performance and sustainability through the SDP programme. Currently, 22 SMEs are participating in the programme, of which 12 are actual log and service suppliers. Eagon is seeking to establish long-term relationships through the SDP with an additional 10 plantation owners, who are not current suppliers to the company. So far, three SME suppliers have succeeded in acquiring FSC certification through the SDP, and Eagon management expects that more will be able to comply with FSC standards by continuing the programme.

Although many SMEs are benefiting from the SDP, the programme has some limitations. Since tree plantations require at least 12 years to mature, the duration of the SDP should be increased. Moreover, SMEs in the programme still face challenges in terms of a lack of financial resources to purchase the necessary equipment to upgrade their technology. The SDP does not address this issue.

Another challenge Eagon is addressing successfully is the social conflict surrounding the large local indigenous population in the region. Eagon has tried to build a constructive relationship with this group through the provision of employment opportunities and a corporate social responsibility programme that benefits local communities.³

2. KIMICA Chile Ltda.

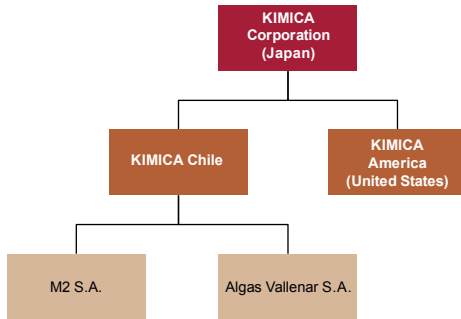
KIMICA, a Japanese company founded in 1941, was the first Asian firm to produce alginates on a commercial scale. Alginate is processed from seaweed and is mainly used as an additive for food and pharmaceuticals.⁴

³ Activities in this programme include the organization of painting contests for children, cultural events and financial support for university students.

⁴ Alginate is used as a food additive mainly in beverages, ice cream and hamburgers. It is also used in the production of medicines, dental moulds, cosmetics and other products.

The product is largely unknown to the public because of its use as an input for other products. In 2014, KIMICA had an 80% market share in the domestic sales of alginates in Japan. The company also supplies its products to more than 600 clients in the global market. In 2013, the company recorded US\$ 65 million in sales and had 350 employees. The company currently has two subsidiaries: KIMICA America and KIMICA Chile. The first was established in 2001 to provide technical advice and promote its products in North America. The second was established in 1987 to access and process raw materials for export to Japan and other overseas markets (see diagram III.2).

Diagram III.2
KIMICA: global corporate structure, 2014



Source: Prepared by the author on the basis of KIMICA [online] www.kimica-alginate.com/company.

As KIMICA expanded its business in the 1970s, demand in Japan outstripped supply. As a result, the firm started to import *Lessonia* (a type of seaweed) from Chile (McHugh, 2003).⁵ However, the supply of Chilean seaweed dropped sharply in 1982-1983, due to the El Niño climate cycle. After analysing different strategies to stabilize the supply of raw materials, the company decided to set up a subsidiary to produce alginate in Chile. The motives for investing in Chile included a stable supply of raw materials, excellent weather conditions in northern Chile for drying the seaweed before processing, good quality transport infrastructure for exporting, low storage costs, good labour quality and special incentives and protection of foreign investment under Chilean law (Executive Decree DL600). In short, the investment in Chile would yield substantial cost reductions and improve competitiveness in the global market.

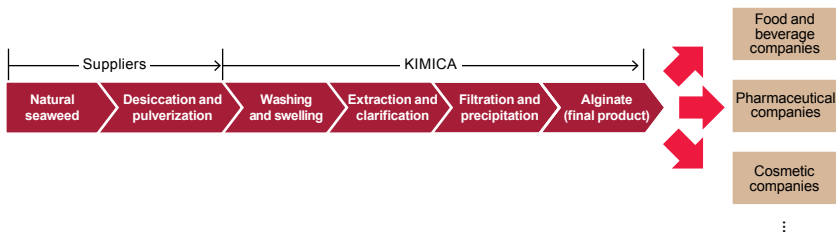
⁵ Any type of brown algae can be processed into alginate, but certain species, such as *Lessonia*, produce higher yields (McHugh, 2003).

Nevertheless, when entering Chile in 1987, the company faced a lack of domestic technology and labour skills for the production of alginate, as well as the absence of a local network of suppliers. To address these deficits, KIMICA brought in the necessary technology and human resources and built a production plant south of the country's capital, Santiago. In 1989, it produced 250 tons of alginate.

As its business in Chile expanded, the company gradually moved production from Japan to Chile to take advantage of the more secure access to raw materials and significantly lower labour costs. KIMICA Chile now concentrates on mass production, while corporate headquarters focuses on research and development (R&D) to produce higher value added products. As a result, 65% of the company's staff works in Chile and the remaining 35% in Japan. In Chile, annual production increased from 250 tons per year in the late 1980s to 2,300 tons per year in 2013. KIMICA Chile exports 99% of its products to Asia, Europe, North America, South America and South Africa. One of the advantages of exporting from Chile is the country's large number of free trade agreements, which provide tariff-free access to most of the company's destination markets.

The KIMICA upstream value chain starts with the seaweed collectors along the coastline of Chile (referred to as *algueros* in Spanish). Intermediaries pay the *algueros* for the collected seaweed, which they sell to two subsidiaries of KIMICA in Chile: M2 and Algas Vallenar. Both subsidiaries dry the seaweed out in the desert before processing. The dried seaweed is processed into pellets smaller than ten millimetres, which are shipped to the KIMICA plant to be transformed into the final products (see diagram III.3).⁶ Downstream, the final products are sold to multinational corporations in the food, beverage and pharmaceutical industries in other countries. These clients require products that meet stringent requirements.

Diagram III.3
KIMICA Chile: alginate value chain, 2014



Source: Prepared by the author on the basis of information provided by KIMICA Corporation.

⁶ M2 and Algas Vallenar also directly export their products to other alginate manufacturers in the world.

In its early years in Chile, KIMICA faced a major challenge in terms of building a stable network of local seaweed suppliers. Currently, there are about 2,000 registered *algueros* in Chile. Since KIMICA and its subsidiaries do not have the capacity to collect the natural seaweed themselves, these Chilean *algueros* play an important role in the business as a source of raw materials. It was therefore critical for KIMICA to build a sustainable relationship with them. A key factor in this process was paying the *algueros* fixed prices, even though the price of seaweed fluctuates. While this represents a burden for KIMICA when the price of seaweed falls, the company has prioritized maintaining a good, long-term relationship with its suppliers.⁷ Moreover, the cost savings generated by moving production from Japan to Chile provided some room to implement this price policy. KIMICA created a subsidiary, Algas Vallenar S.A., to concentrate exclusively on the supply of processed seaweed to KIMICA and absorbed another company, M2 S.A., which was one of the top global suppliers of seaweed. Finally, KIMICA holds regular meetings with its suppliers to keep its product quality at the highest level possible.

KIMICA headquarters assigns one or two engineers to its R&D facility in Chile for effective communication with the subsidiary in Chile. Their main role is to communicate with the Japanese plant and deliver updated information to their co-workers in Latin America. In addition, the R&D plant in Chiba, Japan, deploys technicians to Chile to provide training on any technological updates or new production methods.

KIMICA Chile acquired ISO 9001 certification in 2003, which covers certain modern production and management techniques. Its purpose is to ensure that suppliers are able “to satisfy quality requirements and enhance customer satisfaction in supplier-customer relationships,” according to one manager. Some global buyers require this certification. To maintain these standards, KIMICA Chile maintains active communication with headquarters in Japan, its two subsidiaries and domestic suppliers.

C. The CORFO Supplier Development Programme

The Government of Chile has various institutions that support SMEs. One is the Chilean Economic Development Agency (CORFO), which has several mechanisms for improving the competitiveness of SMEs. The CORFO Supplier Development Programme (SDP) directly promotes

⁷ KIMICA also benefits from paying a fixed price to *algueros* when the seaweed price increases.

business linkages between large firms and their potential SME suppliers. This programme was initiated in 1998 to address the need for compliance with international production standards by Chilean exporters and their SME suppliers. It co-finances projects of large firms that want to improve the performance of their SMEs suppliers. It focuses mainly on primary sectors such as agriculture and mining.

The SDP aims to bridge gaps between the supplier's capacity and the buyer's requirements in certain products and services by promoting cooperation between the two parties. The buyer provides professional advice, training, technical assistance, and technology transfer and supplementary specialized services for participating SME suppliers. The upgrading process helps SMEs develop a more stable market for their outputs, while the large firms improve their local supply of products.

These SDPs can be characterized as public-private cooperation projects. To be eligible for the programme, the buyer's net annual sales must exceed 50,000 development units (UF) or US\$ 1.94 million (as of March 2015), while the net annual sales of each SME supplier should be below that of the buyer and should not exceed UF 100,000 or US\$ 3.87 million.⁸ Buyers have to form a group with their current or potential suppliers and formulate a specific goal to upgrade the suppliers. The minimum number of participating SME suppliers is 10 in the agricultural sector and five in other sectors.

The sponsoring company, often an exporter, chooses an intermediate agent certified by CORFO to develop a project proposal, which is submitted to one of the five regional offices of CORFO. Projects can be submitted throughout the year. The regional offices approve, reject or request adjustments to the proposal, depending on its quality. In other words, CORFO does not intervene directly, but rather promotes initiatives among private players and solely supports the projects financially.

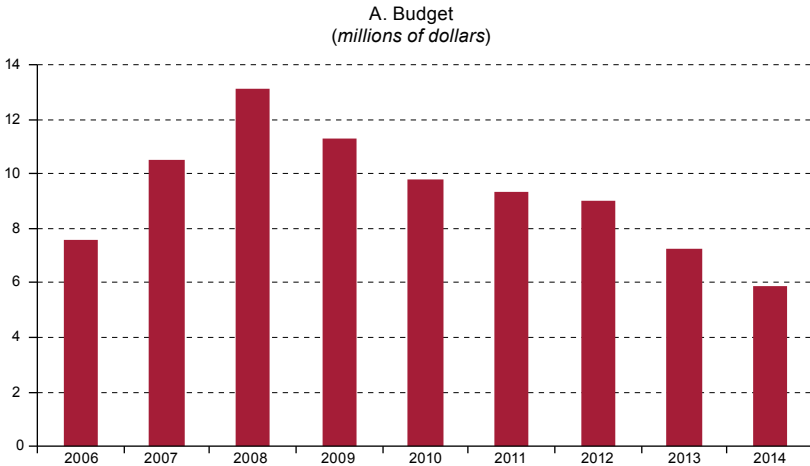
Each approved project has two stages. In the diagnostic stage, the buyer and suppliers agree on areas of intervention and outline their goals in a development plan. The time limit for this stage is six months. CORFO pays up to half of the total cost, with a limit of 10 million pesos or US\$ 15,750 (as of March 2015). In the development stage, the programme designed in the first stage is implemented. The maximum duration of this stage is three years (four years in the case of projects in the agricultural sector). CORFO pays up to half of the total annual cost, with a limit of 59 million pesos or US\$ 93,000 (as of March 2015). Each year, CORFO determines whether the project will be renewed based on

⁸ The UF is an inflation-indexed unit of account used in Chile for many monetary transactions.

the project’s implementation status. The project can be implemented by external consultants or by employees of the buyer.

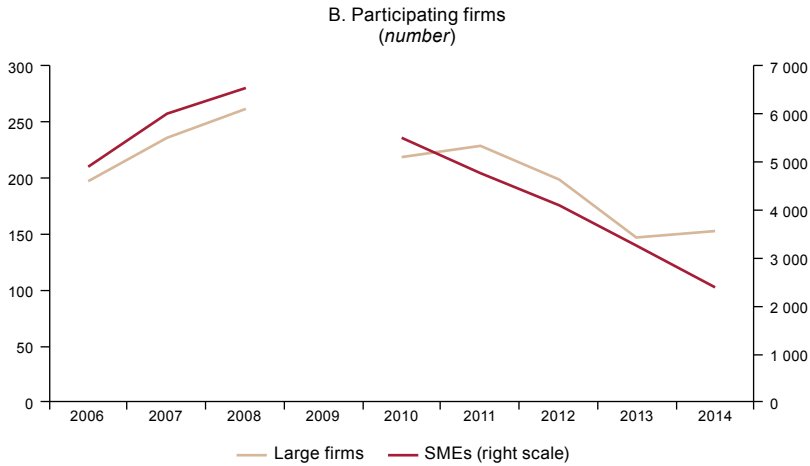
Participation in the SDP is driven by both demand and supply. Buyers and their (potential) suppliers can submit proposals at any time, and the CORFO regional offices also approach large companies to seek their participation in the programme. The size of the overall budget, which is set at the government level, almost doubled between 2006 and 2008. In 2008, the SDP was the largest programme of CORFO, accounting for almost one third of its overall budget, versus 12% in 2002. The SDP budget was cut after 2008, however, and its share in the total budget fell to 6.4% in 2014 (see figure III.6). This downward trend resulted, in part, from the global financial crisis in 2009, which affected many public budgets. Moreover, the government that took office in 2010 for a four-year term changed priorities with regard to SME support programmes. It shifted resources from the SDP and other programmes to instruments promoting business start-ups.⁹ Thus, this negative trend did not result from a drop in demand from the private sector, as demonstrated by the almost complete execution of approved budgets in 2010 to 2014. The downward trend in the budget was also expressed in a drop in the number of participating firms in the SDP. The agricultural and mining sectors continue to account for the bulk of SDPs.

Figure III.6
CORFO Supplier Development Programme: budget
and participating firms, 2006-2014^a



⁹ A programme to promote entrepreneurship increased its share in the CORFO budget from 3.7% in 2009 to 23.8% in 2010 (according to data provided by CORFO to ECLAC).

Figure III.6 (concluded)



Source: Prepared by the author on the basis of data provided by the Chilean Economic Development Agency (CORFO).

^a No data were available for 2009.

The SDP underwent two external evaluations in 2011. A first study by Arráiz, Henríquez and Stucchi (2011) used a combination of propensity score matching and difference-in-differences techniques to establish causal relationships between the SDP interventions and firm performance for a panel of data from 1998 to 2008. Using firm-level data from CORFO and tax authorities, the authors could identify the SDP beneficiaries within the tax data and add an appropriate control group with similar characteristics to the programme's participants.

The study found that the SDP benefitted both SME suppliers and large buyers, which supports the hypothesis that cooperation is positive for both large firms and SMEs. In the case of suppliers in the agribusiness sector, the programme contributed to increased sales and employment, while also improving sustainability. In the case of buyers, the programme boosted sales and increased the probability of firms becoming exporters. Another interesting result is that the benefits for SME suppliers were apparent within one year, whereas it took two years to see the positive outcomes for the buyer firms. This result is expected: large firms generally have a good idea of how their SME suppliers should improve their performance, but it takes time for them to show their clients the benefits of the improved performance of their suppliers. In sum, the findings of this study suggest that the SDP improved and stabilized business links between small firms and their large clients. Moreover, SMEs that

participated in the SDP tended to survive longer and have higher sales than those that did not. The programme also led to employment creation and higher wages in SME suppliers.

The same year, the Latin American Centre for Rural Development (RIMISP, 2011) carried out an evaluation as part of a larger study on the impact of multiple CORFO programmes. The study followed a similar approach to Arráiz, Henríquez and Stucchi (2011), but used a smaller panel of data from 2001 to 2008. The conclusions of the two evaluations partly coincide. The authors of the second study found that the SDP had a positive impact on the sales and employment of the SME suppliers, except in the primary sector. The study therefore recommended applying a stricter selection process in this sector. A project proposal in the primary sector should meet three criteria: the buyer should be a lead firm in the value chain; the same company should support the introduction of innovation in the supplier firms; and the project duration should be extended from three to five years.

These two assessments, combined with an internal qualitative review of the project portfolio in terms of industry composition, geographical areas and results, highlight several challenges in the programme. In particular, modifying the programme design could improve the scope and focus of the projects and thus enhance the final results. The current weaknesses include a concentration of projects in traditional sectors with a low degree of complexity (namely, agriculture and mining); the dependence of many SMEs on a single buyer (monopsony) and a single product; inadequate performance indicators that focus mainly on production and supplier turnover; the restriction of the programme to suppliers that are already involved in the value chain; and the insufficient transfer of technical skills to SME providers.¹⁰

To address these challenges and incorporate the new goals of the current government, CORFO redesigned the SDP in the first half of 2015 in order to shift its priorities to more complex, dynamic and non-traditional value chains. The redesigned programme focuses on the following issues:

- Supporting the generation of social capital between large companies and SMEs.
- Encouraging the building of technical skills in SME suppliers.
- Promoting the development of suppliers of more complex products and services, with an emphasis on value addition and value chain integration.
- Fostering the incorporation of new providers in high value added production chains linked to territories.

¹⁰ Based on an interview with a CORFO representative.

- Stimulating the development of projects in dynamic production chains and improving the selection requirements, for example by requiring the supply chain to include more levels (beyond the buyers' direct suppliers), promoting projects involving more than one applicant (collaboration between buyers), allowing joint financing (buyers and providers) and supporting the growth of emerging value chains (especially in the information and communications technology sector).

In addition to restructuring the programme's strategy, CORFO is also striving to improve the export intensity of the value chains it supports. To this end, the institution has stepped up its collaboration with the national export promotion agency, PROCHILE. This collaboration aims to create synergies between the two institutions to support SME exports.

D. Concluding remarks

This chapter has described how Asian FDI to Chile expanded after 2000. It also presented two case studies on Asian companies (Eagon Lautaro and KIMICA Chile) that have successfully developed their firms in Chile despite the fact that the Chilean business environment is very different from that in their home countries.

Some conclusions can be drawn on the basis of the two case studies. First, both firms have expanded their business internationally, although they are smaller in scale than other MNCs in their home countries. Their establishment in Chile guaranteed access to their main raw materials and improved their global competitiveness. According to the management, this expansion was possible because of key technology and know-how in manufacturing their products in the host country.

Second, the two firms faced important challenges in their early years in Chile due to internal and external factors. Both companies found solutions by developing their global export base directly in Chile. Although the companies had other plans when they entered Chile, the country's multiple free trade agreements with its main trading partners gave them easy access to most export markets. This advantage supported the successful expansion of their businesses and led Chilean subsidiaries to become the main bases for mass production. As a result, the production, exports and employment of their subsidiaries in Chile are now larger than those in their home countries.

Third, both firms had difficulty building a stable network of local suppliers in Chile. Although they followed different approaches, both

companies aimed to build trust with their suppliers and promote their sustainable and inclusive development.

Fourth, the CORFO Supplier Development Programme has contributed to improving linkages between large companies and SME suppliers. This was the case for Eagon Lautaro. However, the programme still faces several challenges, such as the concentration in traditional sectors and missing links with export promotion. Given that the institution is striving to increase the programme's significance, it should forge links with other public institutions to find synergies in promoting SME development and exports.

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Annex III.A1

List of interviewees

- Patrick (O Hyun) Baek, General Manager, Eagon Lautaro S.A.
- Victor Tartari, Manager of Administration and Finance, Eagon Lautaro S.A.
- Christian Mendoza, Programme Coordinator of Supplier Development, Eagon Lautaro S.A.
- Mario Bachmann, General Manager, Santiago Bachmann e Hijo Ltda.
- Alex Reidel, General Manager, Pumalal Gestion Forestal Ltda.
- Javier Carrasco, General Manager, Maestranza Jaar Servicios Ltda.
- Alicia Olivares, Assistant Director of Competitive Development Management, CORFO
- Susana Vega, Chief of Budget, Competitive Development Management, CORFO
- Miguel Soto, Coordinator, Productive Unit, Competitive Instruments, CORFO
- Cristián Salas, Regional Director of Araucanía region, CORFO
- Yoshimi Tanifuji, Commercial Manager, KIMICA Chile Ltda.
- Carolina Lobos, International Cooperation, KIMICA Chile Ltda.
- Héctor Asencio, Research and Development Manager, KIMICA Chile Ltda.

Chapter IV

Backward linkages of Korean multinationals to local small and medium-sized enterprises in the automobile and textile sectors in Brazil and Guatemala

Jae Sung Kwak¹

Summary

This chapter discusses two cases of the Republic of Korea's foreign direct investment in Latin America and their sourcing structures. These are Hyundai Motor Company's investment in Brazil and three Korean investments in the Guatemalan textiles and apparel sector. The cases do not support the hypothesis of the possibility of the creation of local SMEs value chains through foreign direct investment (FDI) in sectors where the Republic of Korea has a comparative advantage over the host countries. Instead, they seem to confirm the enclave economy thesis. Although the host countries were initially successful in attracting multinational corporations,

¹ Professor at Kyung Hee University. The author would like to thank Hangkoo Lee of the Korea Institute for Industrial Economics and Trade and BooHeung Kim of the Korea Federation of Textile Industries. A visit to Hyundai's plant in Brazil was graciously organized by Boongjo Lee and Euihwan Jin of HMC. Helpful comments and suggestions were gratefully received from Nanno Mulder and Hyukjoo Kwon of the Economic Commission for Latin America and the Caribbean (ECLAC). Excellent research assistance was provided by Ina Jung, Youngjin Min, Haggai Ochieng, Ayoung Jang and Nicole Kim.

FDI created an enclave economy in which the benefits are confined to an international sector that is not connected to the wider local economy. The research emphasizes the need for the host government to organically plug local industry into major foreign investors like Hyundai Motor Company. More precisely, the role of the government should focus on building the capacity of start-ups to establish effective business relationships with Korean investors.

Introduction

Economic relations between Asia and Latin America have expanded considerably since 2000 in two dimensions. First, trade between the two regions grew 17% per year, on average, from 2000 to 2013. Second, Asian foreign direct investment (FDI) in Latin America also increased considerably. Investments by the Republic of Korea in Latin America, for example, have grown at an average annual rate of 103% since 2000, reaching an accumulated amount of almost US\$ 5 billion over the past decade. Japan has a longer presence in the region: in 2008 its investments in Latin America reached an all-time high of US\$ 6.7 billion. Similarly, investments by the People's Republic of China grew from virtually nil in 2004 to more than US\$ 1 billion in 2010 (ADB/IDB, 2012). In contrast, reverse flows of Latin American FDI in Asia remain insignificant.

There is a growing debate in Latin America on the potential benefits of Asian FDI in the region, beyond its contribution to the balance of payments. One issue is the lack of linkages and technology spillovers from multinational corporations (MNCs) to the rest of the economy, in particular to small and medium-sized enterprises (SMEs) in sectors such as manufacturing. In this context, this chapter focuses on the linkages between Korean FDI and SMEs in two sectors: the automobile industry in Brazil and the textile and apparel sector in Guatemala. The study examines efforts by Korean multinationals to create backward linkages to SME suppliers of both local and Asian origin.

Asian investment in South America's automobile industry has been predominantly driven by market-seeking opportunities, with Brazil as its main destination. The predominant Asian firms in this market are Japanese and Korean assemblers such as Honda, Hyundai, Nissan and Toyota. This chapter focuses on Hyundai Motor Company's investments in Piracicaba, São Paulo (Brazil), and its domestic backward linkages to local firms supplying parts and components. Some of these suppliers are purely Brazilian, whereas others are subsidiaries of foreign companies.

Asian apparel manufacturers, mainly from the Republic of Korea, have concentrated their investments in Central America and are mainly motivated by rent seeking. This region is close to the United States

market and has abundant cheap labour. Another attraction is its free trade agreements with both the European Union and the United States. This chapter explores the experience of three Korean textile and clothing companies based in Guatemala and their backward linkages to Korean and Guatemalan suppliers.

The hypothesis of this paper is that FDI in the manufacturing sector tends to attract SMEs as local suppliers. As MNCs develop new production bases in foreign countries, they require local supply chains, which typically create backward linkages with domestic firms. This kind of collaborative network between foreign and domestic businesses provides a more stable and sustainable investment that has the potential to broaden the effect of FDI. This chapter reviews the experience of Korean manufacturing firms in two industries in Latin America in order to see if such potential benefits are being established between foreign MNCs and local SMEs. This chapter is based on both desk-based and field-based research, with qualitative interviews conducted in the Republic of Korea, Brazil and Guatemala (see annex IV.1).

A. Investments by the Hyundai Motor Company in Brazil

1. Background

Brazil is a key market for global car producers. In terms of demand for automobiles, it was the world's fourth largest market in 2013 with 3.6 million units sold, after China (18.7 million), the United States (15.6 million) and Japan (4.9 million). In terms of car production, Brazil was the sixth largest in the world in 2010, after China, Japan, the United States, Germany and the Republic of Korea. It produced 3.6 million units, corresponding to a 4.7% share of global production. The Brazilian market was projected to grow by 3.9% in 2014 (Information Handling Services, 2014).

The Brazilian car industry has evolved over three phases. The first phase lasted until the late 1990s. During this period, its market was highly protected, which favoured the arrival of foreign investors. In 1965, the Brazilian government declared its automobile industry a leading industrial sector, allowing only domestically produced automobiles to be sold within the country. During this phase, four global automobile manufacturing firms set up production facilities in Brazil (year of establishment in parenthesis): Ford (1919), GM (1925), Volkswagen (1959), and Fiat (1976). Today these four companies still account for 70% of total domestic car production. With the exception of Fiat, all production facilities are positioned in the ABC region, an industrial complex near São Paulo.²

² The name refers to three smaller cities south of São Paulo: Santo André, São Bernardo do Campo, and São Caetano do Sul. Later, the region became known as the ABCD, with the addition of the city of Diadema.

As a latecomer, Fiat decided to locate its production plants in Minas Gerais to benefit from fewer labour union activities and lower wages compared with the state of São Paulo.

The second phase began in the late 1990s and ended in 2012, when the government succeeded in stabilizing and opening its market. During this period, several other car producers set up shop in Brazil (year of establishment in parenthesis): Honda (1997), Toyota (1998), Renault (1998), Peugeot Citroën (PSA) (2001) and Renault-Nissan (2001). Most of them tried to avoid the ABC complex, where labour unions were powerful. Instead Honda and Toyota located themselves in the interior of the state of São Paulo, while Renault-Nissan and PSA built their plants in Paraná and Rio de Janeiro, respectively.

The third phase started in 2012 with the arrival of several new brands. These included Asian brands such as Hyundai in 2012, Suzuki in 2012, Cherry in 2014 and JAC in 2014, along with German premium brands BMW in 2014, Mercedes-Benz in 2015 and Audi in 2015. Moreover, incumbent companies such as GM, Ford and Volkswagen increased their investments in Brazil. The driving force behind the third phase of FDI was the increasing demand for automobiles, predominantly due to an expanding middle class. In addition, the government implemented a 30-percentage-point tax hike on imported cars that contained less than 65% domestic content and on cars produced by companies that do not conduct research and development (R&D) in Brazil. The tax increase was implemented after a surge of imported cars entered the country in previous years following an appreciation of the currency, which put large pressure on the domestic car industry.

In sum, various Brazilian carrot-and-stick policies have promoted the arrival and operation of multiple foreign car producers. These MNCs enjoy tax benefits, including a 30% industrial tax waiver, as well as free land and infrastructure. Meanwhile, imported cars still face heavy taxes, including a 35% tariff and a 30% industrial tax.

2. Hyundai Motor Brazil

Hyundai Motor Company (HMC) was the first Korean automobile producer in Brazil (Hyundai Motor Brazil, HMB), which started car production in September 2012. This investment was made in Piracicaba in the state of São Paulo, located 167 kilometres northwest of the City of São Paulo. Approximately 1.4 square kilometres of land was granted by the city of Piracicaba. The manufacturing plant produces 35 units per hour and has an annual capacity of 180,000 units. Total investment has reached US\$ 600 million, including US\$ 50 million for construction and equipment.

In 2013, HMB developed and manufactured three models exclusively for the Brazilian market, amounting to 167,000 units: HB20 (hatchback,

117,000 units), HB20s (sedan, 40,000 units) and HB20x (cross-over, 10,000 units). Hyundai's sales of domestically produced and imported cars rose from 108,000 units in 2012 to 213,000 units in 2013, making the company the sixth largest manufacturer in the country, overtaking Toyota and Honda.

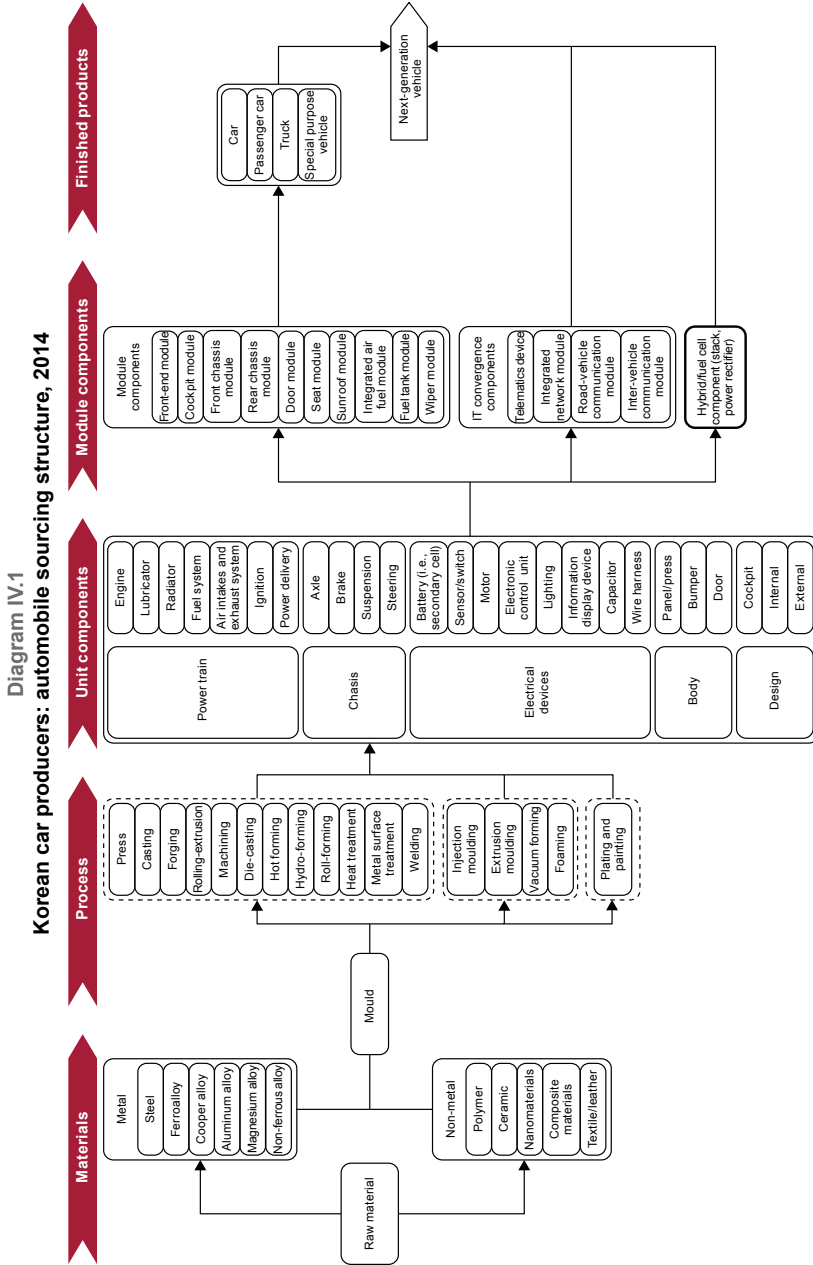
One of the most critical issues in automobile production is how to guarantee a smooth and stable supply chain. As seen in diagram IV.1, the production of an automobile is characterized as a complex web of multilayered parts and components, with a long value chain that starts with raw materials and finishes with the final product—a car.

3. First-tier suppliers to Hyundai Motor Brazil

In 2011, there were 513 car part suppliers registered with the National Union of Automobile Component Industries (SINDIPEÇAS). The largest supplier companies were from Germany and the United States, accounting for 22% and 21% of total national car parts production, respectively. In the global rankings of automobile part suppliers, Bosch ranked first and Continental ranked second, both of which are lead companies. Bosch and Delphi, for instance, supply engines for flexible fuel vehicles (FFVs),³ which account for 90% of the national production of Fiats, Fords, GMs and Volkswagens (or the “Big 4”). Brazilian brands accounted for a minor share of the automobile parts industry because of the strong presence of foreign suppliers based in Brazil. About 70% of automobile parts companies are located close to their clients (including GM, Honda and Volkswagen) in São Paulo where they have their assembly lines, while another 10% are located close to Fiat's factories in Minas Gerais.

The majority of HMB suppliers are Korean firms that have invested in Hyundai's Brazilian production complex. Manufacturing modularization allows firms to decompose their entire production process into independent units, allowing each unit to function separately while still being fully integrated in the production process. Hyundai has adopted the modularization concept in Brazil by developing two domestically based Hyundai Motor Group subsidiaries and a network of cooperation suppliers. These are HMB first-tier suppliers that have made on-site investments in Piracicaba and that produce the majority of parts and components. The two Hyundai subsidiaries were created to supply modules and parts (Hyundai MOBIS) and power trains (transmission and axle) and seating components (Hyundai Dymos). Other suppliers include Doowon, Hanil E-Hwa, Hwashin, Mando, MS Autotech and THN, all of which have a long history working with HMC, both inside and outside of the Republic of Korea. The primary supply structure is presented in table IV.1 below, which further details the inputs of the main first-tier suppliers.

³ FFVs have the capacity to use gasoline or gasoline and ethanol.



Source: Lee, Hangukoo, Hayool Song and Chanjun Kim, *Network Strategy of Korea's Auto Industry in North East Asia*, Korea Institute for Industrial Economics and Trade (KIET), 2011, p. 81.

Table IV.1
Hyundai Motor Brazil's domestic sourcing structure: primary suppliers, 2014

Name of supplier	Products supplied	Remarks
Subsidiaries		
Hyundai MOBIS	Modules and parts	Hyundai sister company that produces high value added inputs
Hyundai Dymos	Power trains	Hyundai sister company that produces most power trains
Primary parts suppliers		
Doowon	Heating and air conditioning equipment	Partnership with HMC that began in the 1980s
Hanil E-Hwa	Automotive interior	Supplies not only Hyundai, but also Ford, Nissan and Volkswagen
Hwashin	Chassis	One of the largest HMC suppliers
Mando	Braking and steering	One of the global leaders in braking and steering systems, with multiple clients
MS Autotech	Car frames	Also accompanied Hyundai's overseas investments in India
THN Corporation	Wire-harness	Wire-harnesses connect electric control systems; more than 90% of THN Corporation's domestic production goes to Hyundai Motors and Hyundai MOBIS
Secondary/tertiary parts suppliers		
Hyundai Hysco	Raw materials	Supplies all raw materials (mainly iron ore) directly from Brazil to HMB and vendors

Source: Prepared by the author, on the basis of interviews with Hyundai Motor Brazil.

Doowon Climate Control was established in 1983 as a manufacturer of automobile climate-control products. The company produces 1,500,000 vehicle air-conditioning, heater, radiator and cooling module units per year. The partnership with HMC was established in the 1980s when Doowon supplied air-conditioning systems for models such as the Excel and the Sonata. It maintains two overseas plants, in the Russian Federation (established in 2008) and Brazil (2010). Sales revenues were US\$ 510 million in 2013.⁴

Hanil E-Hwa is specialized in both car interior and exterior items such as bumpers, door trim, head lining, package trays, pillar trim, screen assembly and seats. The company started doing business with HMC in 1972 when Pony, the very first Korean model, was launched. Hanil E-Hwa also invested overseas, following the investments of HMC (in China in 2003, India in 2006 and Brazil in 2012). The company's annual turnover was US\$ 2 billion in 2012, of which 60% was from overseas sales. Clients of Hanil E-Hwa include Hyundai, Kia, Volkswagen, Ford and Nissan.⁵

⁴ See [online] www.dwdcc.com/eng.

⁵ See Hanil E-Hwa's website [online] www.hanileh.com/company_eng.

Hwashin supplies chassis to HMB. The company has maintained a long-term relationship with Hyundai Motor Group by supplying diversified items such as chassis, front lower arms, subframes, press dies and rear coupled torsion-beam axles since 1975. Hwashin received the best supplier award from HMC in 1989. Since 2000, the company has invested in developing supply bases in all of the major manufacturing markets of HMC: China in 2002, India in 2002, the United States in 2003 and Brazil in 2012. Turnover of Hwashin and its subsidiaries reached US\$ 1 billion in 2012.⁶

Mando (originally called Hyundai International Inc.) was established in 1964 to manufacture forks, knives and spoons for both domestic consumption and export. In 1969, the company initiated the production of automotive components such as alternators, distributors and starter motors under a technical partnership with Mitsubishi Electric Corporation. In 1972, it became the first Korean company to produce truck cranes. Today, Mando specializes in key auto parts such as brake systems, devices that generate electricity, steering systems and suspension systems. In 2013, it was the forty-sixth largest auto part maker in the world with US\$ 5.5 billion in sales revenue. Mando maintains worldwide production and sales networks, including Brazil, China, India and the United States.⁷

MS Autotech was founded in 1982 and is headquartered in Gyeongju (Republic of Korea). The company engages in the production of car components such as front and rear door assembly, hood panel assembly, seat assembly (including frames and cushions) and tailgate panel and hinge assembly. Subsidiaries of the company include MyungShin Co, MyungShin Industry, MSB and MSI. The company invested overseas following Hyundai's investments in India in 2007 and Brazil in 2012. In 2010, a five-star technology status was granted by HMC. Company sales in 2013 were US\$ 613 million.⁸

THN Corporation specializes in the production of wire harnesses that can transfer both alternating current (AC) and direct current (DC) without any loss in power. THN established manufacturing plants in China in 2002, 2004 and 2007, in Brazil in 2009 and in Paraguay in 2012. Annual turnover was US\$ 165 million in 2012.⁹ In 2013, a large part of the company's Brazilian operations was moved to Paraguay, where labour costs are lower (Koo, 2013).

⁶ See Hwashin Corporation's website [online] www.hwashin.co.kr/kr/main.do.

⁷ See Mando's website [online] www.mando.com.

⁸ See MS Autotech's website [online] www.ms-global.com.

⁹ See THN Corporation's website [online] www.th-net.co.kr.

4. Local sourcing structure of Hanil

This section focuses on the supply linkages with one of the key first-tier suppliers of HMB, namely, Hanil. Through extensive overseas investments, Hanil has strengthened its position in the development, manufacture and sale of automobile interior parts in the global market. Hanil also has its own sourcing structure, as it outsources to local auto parts manufacturers and suppliers including Basell Poliolefinas, Better's, Acoustic Planning Company (COPLAC), Formtap, Inylbra, Plascar, and TBI (see table IV.2).

Table IV.2
Hanil: local sourcing structure of inputs for Hyundai Motors Brazil, 2014

Type of input	Name of Supplier	Name of specific items	Mode of Production	Origin of raw materials	Location and distance from Hanil		
					Location	Distance (kilometres)	Delivery time (hours)
Injection moulding	TBI	Door trim, console, subparts	Made in plant (MIP)	Local	Nova Odessa	50	1
Painting	Plascar	Armrest	MIP	Local	Jundiai	100	1.5
Plastic components	COPLAC	Dashboard insulator	Outsourced	Local	Itu	90	1.5
	Formtap	Head liner, luggage mat	MIP	Local	São Paulo	180	4
	Inylbra	Floor carpet, dashboard insulator	MIP	Local	São Paulo	180	4
	Plascar	Plastic trays	MIP	Local	Varginha	300	5
Product assembly document	Better's	Manual	MIP	Local	Cajamar	120	2

Source: Prepared by the author, on the basis of information supplied by Hanil.

The Acoustic Planning Company (COPLAC) supplies Hanil with plastic components, such as dashboard insulators, deadeners, headliners, hood absorbers, moulded carpets, outer dashboard insulators, package trays, thermal acoustics and wheel covers. The company is based in Itu in the state of São Paulo and has between 201 and 500 employees. Although it is a medium-sized company, COPLAC is one of Brazil's leading developers and producers of deadeners, insulators and interior trim. The company has invested intensively in modern business practices and marketing techniques to satisfy its customers. It has bought state-of-the-art equipment to produce high-quality products that match their customers' specifications. In addition, the company uses recycled industrial residues to manufacture some of its products.

Another key supplier of Hanil is Formtap, which produces acoustic insulators. This large São Paulo-based company was established in 1933. It initially concentrated on the production of natural fibre doormats from coir and sisal. In 1956, the group established an original equipment manufacturing (OEM) plant in order to produce interior trims for vehicles, while continuing to operate in the market of natural fibres. Since then, Formtap has consolidated its position as one of the leading Brazilian producers of automobile components. It operates two production facilities: one in Diadema (São Paulo) and another in Betir. Currently, Formtap produces vacuum moulding plastic parts for home textiles and automobile segments and supplies headliners and luggage mats to Hanil.

Inylbra is another large Brazilian auto parts manufacturer that supplies floor carpets to Hanil. The company started operations in 1968 and now has around 5,000 employees. Its automobile products, which include various non-woven applications and non-original fabrics, are mainly for interior finishes. In 2000, Inylbra initiated the production of needled non-woven materials using recycled bottles of a specific type of plastic (polyethylene terephthalate (PET)). In the following years, the company invested heavily in new plants and equipment to keep up with accelerating demand in the Brazilian automobile industry. This strategy enabled it to gain a leading edge in the Brazilian needle market. The company has been acknowledged for its leadership in quality products that are environmentally friendly. It has acquired ISO 1400 certification for environmental management, ISO TS 16949 certification for automobile quality management and ISO 9001 certification for domestic quality management. In addition, Ford Motor Company awarded the company Ford Q1 certification in recognition of its high standards.

Plascar is a large company that specializes in the production of internal and external plastic components.¹⁰ It supplies car manufacturers in the Southern Common Market (MERCOSUR) countries, Australia, Canada, Europe, Mexico and the United States. In Brazil, its main clients are the largest four auto companies. Plascar was established in 1963 in the city of Jundiaí (São Paulo state). It started out supplying rubber products and entered the automobile market in 1973. After several mergers in the mid-1980s it became one of the leaders in the automobile plastic parts sector. The majority shareholder, Permali do Brasil Indústria e Comércio Ltda, is a fully owned subsidiary of International Automotive Components Group, with headquarters in the United States.

¹⁰ Plascar's main products include air diffusers, bumpers, column switches, cup holders, dashboards, door sides, internal trunk hoods, lighting systems (headlamps), mats, steering wheels, sun visors and window drivers. It also produces replacement auto parts for lighting and signalling systems (see [online] www.plascar.com.br).

In 1993, Plascar created a new business unit (thermoforming) with the acquisition of state-of-the-art equipment. It obtained ISO 9001 and ISO 9002 certifications in 1994. In 1995, it built a plant in Betim city (state of Minas Gerais) to manufacture steering wheels for export. The company also created other facilities in the same city to manufacture dashboard systems and services. Moreover, it modernized a dashboard manufacturing unit in Jundiaí, which later earned ISO 9000 certification. Around the same time it became a limited liability company and changed its name to Plascar Industry and Trade. In 2005, the company changed its name again to Plascar Component Plastics Industry.

Finally, TBI was founded in Nova Odessa (São Paulo) in 2012. It is a small Korean company with between 51 and 200 employees. The company is a small player within the industry, specializing in plastic injection systems and supplying HMB with door trims and console subparts.

5. Implications

The success of Hyundai Motors Brazil can be attributed to several corporate strategies. First, the company encouraged its first-tier Korean suppliers to invest in establishing supply bases in the vicinity of its manufacturing plant in Brazil, while also creating two new subsidiaries. This ensured smooth production of automobiles in Brazil, as existing suppliers understand the capacity requirements and demands of Hyundai. Therefore, it is preferable to use the same suppliers at home and abroad in order to maintain reliability and reinforce business relationships.

Second, some first- and second-tier companies have been actively outsourcing to local firms. For example, Hanil invested in local firms in order to meet supply requirements for HMB. In a context of fierce competition in the global car market, differentiated outsourcing strategies are necessary for survival. Moreover, regional supplier networks are important since the degree of regional trade liberalization varies depending on the regional or bilateral trade agreements that the country has.

Third, Brazilian SMEs are largely absent at least up to the second tier. Most participants in the HMB value chain are large, leaving little opportunity for local SMEs to actively engage in the local value chain.

Moreover, HMB has apparently not made efforts to directly engage with Brazilian SME suppliers. This is strikingly different from the existing cooperation model between Hyundai and local SMEs in the Republic of Korea. At home, the company supported more than 2,500 local SME suppliers to upgrade their finances, human resources and R&D. It spent around US\$ 600 million per year on these SME

support initiatives (Money Today, 2012). Therefore, there is a strong need to extend the inclusive HMC growth model for SMEs in the Republic of Korea to its overseas subsidiaries.

B. Korean investment in the Guatemalan textile and apparel sector

1. Background

International trade regulations were a key determinant for the allocation of global textile and apparel production and investment. In 1995, the Agreement on Textiles and Clothing (ATC) replaced the Multi-Fibre Arrangement. By 2005, the ATC agreement had expired, along with its quota system.¹¹ The latter put a limit on the volume of goods produced abroad and sold domestically. In response to this system, many textile companies invested in countries without quotas. For example, some Korean companies built several factories in Central America. These turned out to be very successful.

The gradual expiration of these quotas from 1995 onward ended decades of bilateral non-tariff protection, setting the stage for a substantial reallocation of production and exports across countries. China's textile and clothing exports to the United States increased 39% in 2005, with exports of goods whose quotas were relaxed at the beginning of the year seeing an increase of 270%. In the same year, this industry became fully integrated into the General Agreement on Tariffs and Trade (GATT). This forced many countries, including the European Union and the United States, to end the allocation of import shares to each exporting country (Brambilla, Khandelwal and Schott, 2010).

In 2004, the United States, Central America (Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua) and the Dominican Republic signed a free trade agreement (CAFTA-DR). This was the first free trade agreement of the United States with a group of smaller developing economies. It has facilitated trade and investment among the seven countries and promotes regional integration by creating new economic opportunities through the elimination of tariffs, the reduction of regulatory barriers in services, and the promotion of transparency. The CAFTA-DR rules on textiles and apparel intended to support trade within the region. Most apparel enters the region under a "yarn forward" rule of origin, which requires

¹¹ This framework for bilateral agreements or unilateral actions established quotas limiting imports into countries whose domestic industries were facing serious damage from rapidly increasing imports (see [online] www.wto.org/english/thewto_e/whatis_e/tif_e/agrm5_e.htm).

the member country to use member-produced yarn in textiles in order to receive duty-free access.

Notwithstanding CAFTA-DR, the share of apparel imports from the members of the Agreement in total United States imports has declined over the past decade. This is mainly the result of the growing penetration of Asian and other low-cost producers. It has mainly affected Central America's major apparel producers, namely, Honduras, El Salvador and Guatemala. Costa Rica, which is the most advanced country in Central America, has ceded its apparel exports to other countries. Instead, it focuses on higher value added products such as yarn and high-end niche products.

In contrast, Nicaragua is expanding its apparel exports to the United States for two reasons. First, it benefits from the CAFTA-DR tariff preference levels (TPLs), which allow Nicaragua to export apparel goods assembled from limited amounts of third-country materials (for example, less expensive Asian yarns). Second, relatively low wages in Nicaragua mean its firms are still competitive in the low-skilled segment of the industry (Hornbeck, 2012).

In summary, although Central American countries have faced a severe challenge with the expiration of ATC in 2005, CAFTA-DR has provided some new export opportunities. This has again attracted Korean investors to this subregion. From 2005 to 2013, Korean investment in the CAFTA-DR's textile and apparel sector totalled US\$ 98 million (Korea Eximbank, 2015). Currently, 120 out of 200 clothing factories in Guatemala are owned by Korean companies.¹²

Korean textile firms started investing in Guatemala in 1995. After having operated in Honduras for two years under difficult conditions, the Korean company Shin-won relocated its operations to Palín, a nearby city in Guatemala.¹³ Other companies followed suit, including Hansae, Gwang-lim and Sae-A. Guatemala was Korea's fourth largest textile investment destination in terms of sales volume in 2011 after Viet Nam, Indonesia and Bangladesh. Guatemala also outperforms neighbouring countries such as El Salvador and Nicaragua in terms of Korean operations. Of the top six Korean textile companies, four have operations in Guatemala.

All Korean textile companies have adopted similar production strategies. First, decisions on production locations are made in consultation with their clients. These include brands such as Gap and Nike. Second, Korean companies that invest in Latin America also

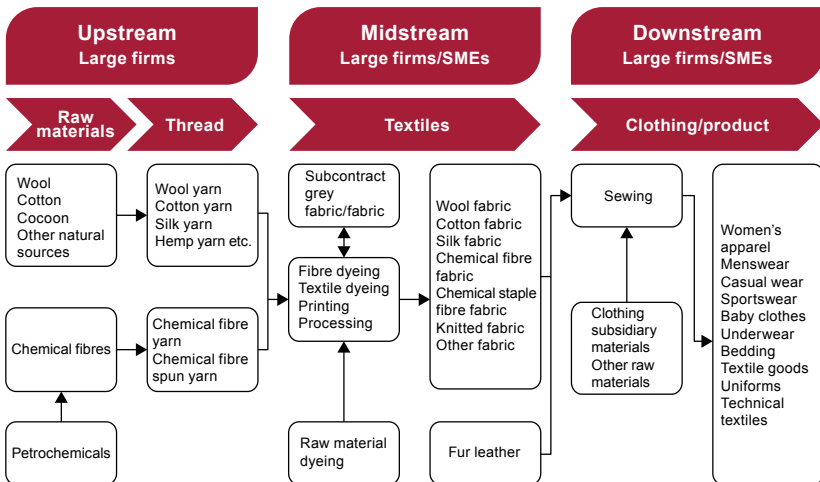
¹² In this chapter, Korean companies are defined as including foreign direct investment from Korea, Korean residents in the region and Korean residents in the United States.

¹³ Shin-won decided to relocate to Palín for three reasons: increased labour productivity because of lower temperatures in the mountains; access to the workforce; and geographical location (between Guatemala City and the San José port).

invest in Asia. This helps to solve unexpected regional supply shortages: when factories in one region fail to meet demand, they can increase supply in the other. Third, production is located in several regions, but global marketing is centralized at the companies’ headquarters. Fourth, the value chain is created within Korean business circles both inside and outside the countries. In Guatemala, there are eight local mills producing knits, woven fabrics and yarns. In the downward segment of the value chain, most of the 169 apparel factories are Korean owned (*FIBER Journal*, 2011).

The apparel and textile industry is driven by brand-name manufacturers, marketers and large retail buyers. They play a central role in setting up decentralized production networks in developing countries. As shown in diagram IV.2, large firms control the upstream segment of the industry’s value chain, due to the large investments required. The middle and downstream segments are highly competitive with multiple large, medium and small enterprises competing for contracts. Nevertheless, the bulk of the mass production of apparel is undertaken by big players. Large retailers determine product specifications and designs and then outsource the production to external contractors. These focus on the production of the final product and outsource all the low-level activities to firms in developing countries. Contractors bridge the gap between global brands and supply chains in emerging economies.

Diagram IV.2
Korean textile and apparel companies: value chain



Source: Korea Trade Commission, *Report on Industrial Competitiveness of Korea*, 2004 [online] www.ktc.go.kr/db/cl/kdc_ReportPart_view.jsp?seq=107&sn=1.

The main investment locations of the six major Korean apparel manufacturers are listed in table IV.3. As expected, there is a large concentration of investment in Asian countries such as Bangladesh, Indonesia and Viet Nam. Investment in China seems to be fairly limited due to the competition of strong local producers. Central American countries appear to be the second preferred destination, led by Guatemala and Nicaragua.

Table IV.3
Six Korean textile companies: production of subsidiaries abroad, 2011
(Millions of dollars)

	Company A	Company B	Company C	Company D	Company E	Company F	Total
Asia	Bangladesh				600		600
	Cambodia			152			152
	China	45	23		11	95	174
	Indonesia	34	446	257	280		1 147
	Democratic People's Republic of Korea ^a	104					104
	Philippines				27		27
	Viet Nam	98	251	405	271	4	125	1 154
Central America	El Salvador				20		20
	Guatemala	72	269	90	92		493
	Nicaragua		142	119	24		285
Totals for 2011	353	1 131	871	857	719	255	4 156
Total in 2010	326	1 087	750	667	609	200	3 639

Source: Korea Federation of Textile Industries (KOFOTI), "Contemporary global textile industry and competitiveness of Korean companies", *Textile and Fashion Industry*, 2012, p. 29.

^a All subsidiaries operating in the Democratic People's Republic of Korea are located in Gaesung.

2. Three Korean investors in Guatemala

Due to growing global competition, rising wages at home, reduced public support and difficulties in securing bank loans, Korean textile companies were forced to relocate abroad to remain competitive. In this context, Guatemala's low labour costs and abundant and skilful human resources have played a significant role in attracting textile firms to the country. In Guatemala, subsidiaries of Korean companies and their local suppliers, which are mostly Korean as well, produce between 80% and 90% of the nation's textile exports.

Hansae was established in 1982. This large original equipment manufacturer (OEM) generated sales of US\$ 850 million in 2010.¹⁴ Its main clients were Gap, Nike, Target and Wal-Mart. It maintains

¹⁴ For a description of original equipment manufacturing, see annex IV.2.

manufacturing operations (in order of decreasing presence) in China, Viet Nam, Indonesia, Guatemala and Nicaragua. In Guatemala, Hansae has two local subsidiaries: Hansae Global (based in Zona 17 of Guatemala City) and Hansae Guatemala (based in San José Pinula). Hansae headquarters in Seoul coordinate the planning, sales and orders (including design), while factories in Guatemala produce in accordance with the requirements and specifications provided by headquarters. Its main products include leggings (for children), pyjamas, sleeveless and basic T-shirts and sweat pants. Hansae Guatemala subcontracts their printing services to Guatemalan companies that are owned and run by Koreans, mainly Dong-gwang printing and Sharon. The company has consistently grown over the last five years, with estimated sales of US\$ 100 million in 2013. The main export destination of the Guatemalan subsidiaries is the United States, which accounts for 90% of all Hansae's Guatemalan exports. The company also exports small volumes to China, Japan, the Philippines, Turkey and the United Arab Emirates.

INT Trading S.A. was founded in Guatemala in 2004. It is the only Korean producer in Latin America and the Caribbean with its own complete production line (including a spinning mill). This allows the company to conduct yarning, knitting, dyeing, sewing and printing (embroidery) activities. Consequently, the company has the capacity to constantly update its styles and to produce complementary high value added accessories and buttons. INT currently has 40 Korean employees and between 800 and 1,000 Guatemalan employees. Most of the latter are under 35 years old and some speak three languages (Spanish, English and basic Korean), which facilitates communication with stakeholders. The company primarily produces women's fashion garments. All INT designs are developed at the company's design department in the United States, so that the firm can keep pace with local fashion trends. The company's main clients (in decreasing order of importance) are Wal-Mart, Kohl's, Express, Carter's and Old Navy. Because the majority of its clients are American buyers, the company is very sensitive to United States fashion trends. From 2004 to 2013, the company recorded steady growth, and sales totalled around US\$ 60 million in 2013.

Sae-A is one of the largest apparel manufacturers in the world, with annual exports of US\$ 1.8 billion in 2013. The company operates 41 production facilities in 10 countries and maintains 24 offices, including its headquarters in Seoul. Since its foundation in 1986, Sae-A has become a leading supplier for some of the world's biggest retailers and brands. The company was the first Korean investor in Guatemala in 1998. Moreover, it is the only Korean apparel company that has invested in Haiti, starting in 2012. In Costa Rica, it has invested US\$ 50 million in a yarn production plant to be opened in 2015. As a

result, it is one of the few Korean apparel companies that operates a complete global vertical production network.¹⁵ The company is also a pioneer of original design manufacturing (ODM),¹⁶ with an in-house design team. Sae-A maintains 73 knitting lines, including a printing facility to produce T-shirts, polo shirts and trousers, all produced by six subsidiaries: Sae-A Texpia I, II, III, Winners, Centexsa and Glovia (printing) (Sae-A, 2014).

Some Korean producers face a dilemma in terms of whether to specialize in production or in selling brand products. For example, Youngone Trading owns the rights to the domestic sale of North Face in Korea. It is unclear whether Youngone Trading earns more profit from selling the brand or from manufacturing the product. Own branding is yet to be developed in Korea.

3. Sourcing structure of Korean textile and apparel companies in Guatemala

The subsidiaries of Korean textile and apparel companies in Guatemala operate within global value chains. Based on orders from brand companies, they either manufacture products in-house or subcontract to other companies. Currently, global outsourcing is very common to procure the necessary materials and fasteners. Existing OEM companies usually separate the manufacturers from the brand company. Companies that have the best outsourcing strategies are those that often offer the most competitive prices. Cost effectiveness is the most critical principle for both small and large OEM companies, and they therefore require their factories to produce at the lowest possible input cost while meeting specified quality criteria and deadlines. A rising trend in ODM is to allow companies that design and manufacture specified products to eventually authorize other firms to rebrand and sell them. In this type of arrangement, the company can regulate its suppliers, branding company and vendors.

Depending on the quantity and type of orders, the Korean subsidiaries in Guatemala source a variable share of materials, parts and components directly from Korean headquarters. However, to benefit from low or zero tariff access to the United States under CAFTA-DR, a certain share of the materials need to be sourced within CAFTA-DR member countries. In practice, Korean companies source all raw materials that are available in the host country, while the rest are imported from elsewhere based on the centralized global sourcing strategy of the company.

¹⁵ Sae-A operates a complete value chain with its own from spinning mill in Costa Rica, a fabric mill in Indonesia, and clothing plants for sewing, printing and washing in eight other countries.

¹⁶ See annex IV.2 for a description of original design manufacturing.

Occasionally, buyers request labels or hangtags to be imported from designated places (mostly from Hong Kong).

INT Trading predominantly collaborates with Korean subcontractors because local domestic production capacity is insufficient to meet supply chain requirements. Knitting and dyeing processes are mainly subcontracted, as they require advanced technology and skilled workers. Most textile companies in Guatemala seem to follow similar sourcing patterns.

A number of other difficulties further inhibit the local sourcing of supplies. The creation of backward linkages is hindered by concerns over the poor safety record in Guatemala, the lack of business creditworthiness of local companies and the absence of effective government policies to improve the productivity of domestic suppliers.

Nevertheless, Guatemalan-owned firms have started to absorb some of the advanced techniques from their Korean peers—for example, bundling, cellular manufacturing, advanced quality control procedures and fabric dyeing. These developments resulted from local firms hiring Korean managers or establishing business links through local business associations (VESTEX).¹⁷ The benefits of Korean ownership have thus extended beyond the Korean-owned companies, although they reserve the highest value added activities for themselves and triangulate production between Guatemala and other countries. Moreover, Korean and Guatemalan firms have cross-fertilized each other's styles and tools to a high degree. Korean investment may not have established a local value chain in the Guatemalan textile industry due to its enclave nature, but it has contributed to the industry's development.

4. Implications

In the past, the textile and apparel industry was led by yarn producers, who were the lead firms at the top of the global value chain. In contrast, value chains are now dominated by buyers who control global brands and subcontract most of the production process to third parties. The textile industry has been transformed into a high value added sector where value creation depends on design, high technology and marketing strategies (KOFOTI, 2012). In this context, Korean companies, such as Hansoll and Hansae, have managed to create longer value chains by improving their technology, production capacity and experience.

Although some local backward linkages have been created, Guatemala's textile and apparel sector continues to be dominated by Korean business and expatriate circles. Korean companies operating in

¹⁷ In 2014, 80% of VESTEX member companies were Korean owned.

Central America have common corporate strategies, pursuing the most cost-effective mode of production to meet their buyers' requirements. This strategy involves a complex set of decisions that takes into account cost, quality, delivery and nearshoring opportunities to mega markets. Because Korean apparel manufacturers have already established global sourcing chains as part of their strategic plans, they have only made small investments in local suppliers.

Most countries in Central America have created a niche within the regional textile and apparel value chain, depending on their labour cost and skills. Currently, salary levels are highest in Costa Rica, followed by Guatemala, Nicaragua and Haiti. The recent minimum wage increases create significant challenges for businesses to remain competitive. Second, skill levels are highest in Guatemala, which has the largest concentration of indigenous people in Central America and whose skills and techniques are comparable to their peers in South-East Asia. Meanwhile, factories in Nicaragua and Haiti are suitable for producing low-tech shirts. The combination of these two factors, together with a company's global strategy, determines the investment pattern in terms of location, size and specialized products.

Korean companies' engagement in Central America's textile and apparel industry has recently entered a new phase, with the opening of Sae-A's new spinning mill in Costa Rica. Cotton yarns produced at the Costa Rican plant will be exported to clothing factories in neighbouring countries. "This investment is part of a long-term vision with a growth plan for the next 30 years... If we achieve the performance and the expected success, we will consider expanding operations with a second investment in Costa Rica" (Kwang Ho Yoo, company president). In addition, Canadian Gildan Activewear has announced that it will open a textile manufacturing plant in the north-western province of Guanacaste, Costa Rica (Arias, 2014).

C. Conclusion

This chapter set out to identify backward linkages between Korean firms and local companies by examining the automotive industry in Brazil and the textile and apparel industry in Guatemala. The case studies presented in this chapter do not seem to support the original hypothesis that FDI contributes to the creation of backward linkages with local producers. Instead, Korean investors rely on their own enclave economy, which has mostly benefitted international suppliers rather than local companies.

There are several possible explanations for this situation. First, foreign investors are confronted with weak domestic suppliers. Interviewed firms revealed that they have not received any serious offers from potential local suppliers to substitute imported parts and components. Second, host governments have not created business linkage programmes or provided sufficient support to local SMEs. In the absence of government initiatives, especially industrial policies to promote linkages between local SMEs and large investors, it is unlikely that business linkages will emerge automatically.

Third, both large and small Korean investors tend to regard FDI activities as extensions of their existing modes of production in Korea. This has resulted in minimizing the participation of local suppliers. In the case of Hyundai Motor Brazil (HMB), this pattern seems to coincide with a recent shift towards creating “industrial condominiums,” which are also being established by other automobile manufacturers in Brazil, such as Chrysler, Ford, GM, Mercedes-Benz, Renault and Volkswagen. Under this scheme, suppliers provide modules, but the assembler controls assembly and other core operations (Salerno, 2000). The suppliers are generally located on-site or close to the production line.¹⁸

Nevertheless, this chapter has identified some initial linkages with local, mostly larger, firms. In the case of the automotive industry in Brazil, some first-tier suppliers of HMB, such as Hanil, have started to connect with local suppliers. This diversification is likely to continue in the future. In the case of the textile and apparel industry in Guatemala, some local firms have become suppliers to Korean firms. In both cases, there is a key role for the government to improve the capabilities of local entrepreneurs and promote linkages between local SMEs and Korean investors.

¹⁸ When HMB created their complex in Piracicaba, the auto parts industry was not developed. Hyundai therefore invited existing suppliers from the Republic of Korea, which accentuated the enclave nature of its investment at least at the first tier of suppliers. Hyundai Motors has essentially replicated its global sourcing structure in Brazil. This may be the main reason why Korean investments have failed to create any sustainable production networks with local SMEs.

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Annex IV.A1

List of people interviewed

- Jin, Euihwan, Vice-President, Hyundai Motor Brazil
- Hwang, Kwang-ho, First Secretary, Embassy of the Republic of Korea in Guatemala
- Lee, Youngtaek, Vice-President, Hyundai Motor Brazil
- Kim, Booheung, Korea Federation of Textile Industries (KOFOTI), Republic of Korea
- Kim, Heungseop, Director General, Hyundai Motor Brazil
- Kim, Sangho, Consul, Embassy of the Republic of Korea in Guatemala
- Koo, Bonyeon, Hanil E-Hwh, Brazil
- Lee, Gabhee, Hyundai Mobis, Brazil
- Lee, Bongjoo, Director, Hyundai Motor Company, Republic of Korea
- Lee, Hangkoo, Korea Institute for Industrial Economics and Trade (KIET), Republic of Korea
- Lee, Myunggoo, Director, Sae-A, Guatemala
- Lee, Sungsu, Executive Director, INT, Guatemala
- Min, Changsung, Director, Sae-A, Korea
- Park, Jeong-Hyeon, Elim, Guatemala
- Park, Kyungchan, Director, Hyundai Motor Brazil
- Park, Seu-Ran, Hansea, Guatemala
- Ryu, Kyungho, Hwashin, Brazil
- You, Dongryeol, President, Association of Koreans in Guatemala

Annex IV.A2

Production networks in the textile and apparel industry

	Original equipment manufacturing (OEM)	Original design manufacturing (ODM)	Original brand manufacturing (OBM)
Definition	The product and brand name are manufactured according to purchaser's order	Contractors are in charge of the whole process of product development and manufacture	The company produces and sells the product with its own brand name
Structure	Manufacturing	Manufacturing + Design	Manufacturing + Design + Logistics
Industry	Cutting→sewing→finishing→packing→shipping	Design (sample approval)→Raw material→purchase Cutting→sewing→ finishing →packing→shipping	Design (sample approval)→Raw material→purchase Cutting→sewing→ finishing →packing→shipping Logistics + Marketing
Advantages	<ul style="list-style-type: none"> - Revenue growth is possible in the market with the customer base - Potential economies of scale from mass production 	<ul style="list-style-type: none"> - Higher value added than OEM - Royalty profit 	<ul style="list-style-type: none"> - Highest value added
Disadvantages	<ul style="list-style-type: none"> - High performance variability based on contract with the purchaser - Profit margin is low 		<ul style="list-style-type: none"> - Time and cost invested for establishing distribution channel and brand marketing

Source: Lee, Heejung , "Textile OEM Industry: Issues and Prospects", Issue Report, Korea Ratings, 2013, p.3 [online] www.rating.co.kr/.

Chapter V

Trans-Latin value chains in Asia: the role of small and medium-sized enterprises

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Introduction

An increasing share of international production and trade is organized within global value chains (GVCs) that encompass “the full range of activities that firms and workers do to bring a product from its conception to its end use and beyond. This includes activities such as design, production, marketing, distribution and support to the final consumer.”² Hence, the survival of small and medium-sized enterprises (SMEs) depends increasingly on their ability to enter and upgrade in these value chains, which are usually governed by large firms.

The participation of SMEs in GVCs poses large challenges, but it also offers several potential benefits. The major challenge is that access to those chains often depends on compliance with stringent requirements in terms of quality, delivery times, traceability and so on. Examples of benefits include better access to credit, inputs, information, and technical assistance granted by lead firms (see Van Dijk and Trienekens, 2012; Cattaneo and others, 2013).

¹ Centro de Investigaciones para la Transformación (Research Centre for Industrial Transformation) (CENIT)/Universidad Nacional de Tres de Febrero (UNTREF). The authors thank Agostina Beveraggi for her assistance.

² See [online] <https://globalvaluechains.org/concept-tools>.

Another advantage is that participation in GVCs provides SMEs with an opportunity for learning, especially when they are direct suppliers to lead firms. The learning process helps them take on more complex functions (this is what the literature calls functional upgrading; Pietrobelli and Rabelotti, 2005). This also may allow them to become independent sellers for different clients in local and foreign markets (Cafaggi and others, 2012; Meléndez and Uribe, 2012). However, the possibility of going through this kind of upgrading process depends on the value chain's governance mechanism within which the firms operate. In hierarchical networks, it is very challenging for captive suppliers and SMEs to accumulate the required knowledge and capabilities (Pietrobelli and Rabelotti, 2005).

East and South-East Asia are the developing regions that are the most integrated into the GVC logic, and to a large extent this is the fruit of their internationalization strategies (WTO, 2011). Large Asian multinationals from both middle- and high-income countries have created their own value chains by decentralizing their production to other Asian countries and further afield. This process began several decades ago with Japanese multinationals. The Asian region is also known for the higher participation of SMEs in GVCs compared with their peers in other developing regions.

In contrast, large multinational firms in Latin America, or trans-Latins, are much less internationalized than their Asian peers. Moreover, the activities of trans-Latins tend to be mainly horizontal: they create subsidiaries that sell the same product that their parent company sells at home (De la Torre, Didier and Pinat, 2014). Hence, trans-Latins invest abroad mainly to diversify country risk or access new markets in which to sell their products. Their international investments are predominantly in Latin America and, to a lesser extent, Europe. Their presence in Asia is still scarce (ECLAC, 2014). However, an increasing number of firms from Argentina, Brazil, Chile, Colombia, Mexico and Peru have productive and commercial investments in China and some other Asian countries. Most of these companies are leaders in their respective business sectors back home (López, Ramos and Torre, 2012).

Latin American exports to Asia are sizeable, but consist mainly of primary commodities (with or without some level of processing) sold by large firms. Moreover, these exports are highly concentrated in a few products, especially in the case of China. This is true even in comparison with other natural-resource-abundant regions (Castro, Tramutola and Monat, 2005; Castro, 2013; ECLAC, 2008).

In general, SMEs in Latin America find it particularly difficult to export to Asia given the geographical distance, cultural differences and their lack of competitiveness (OECD/ECLAC, 2012). A more accessible route for SMEs is to export indirectly by participating in value chains created

by trans-Latins that sell products or services to Asia. As in any other GVC, participation is conditional on meeting quality, delivery and technology standards imposed by the trans-Latin firms. Moreover, SMEs require an understanding of the specific characteristics of Asian markets and must adopt their management and marketing strategies. Trans-Latins have experience, contacts and valuable information that can help SMEs in this process.

In this context, the question arises whether SMEs from Latin America can and do participate in value chains around trans-Latin investments in Asia. What conditions are imposed on SMEs to participate in these value chains? What are the competitive advantages and disadvantages of SMEs in Latin America that constrain their participation in GVCs governed by trans-Latins? Do trans-Latins provide technical and financial assistance to their suppliers? Is the integration of SMEs into these value chains fostered by public policies?

Another key issue is whether the presence of trans-Latins in Asia generates specific impacts on SMEs. Does that presence result in new requirements in terms of production, packaging, technology, quality and so forth? As trans-Latins engage in investments in Asia, does it become an indirect vehicle for the expansion of Latin American SMEs or, on the contrary, an opportunity to replace those suppliers with Asian ones?

Latin American economies are characterized by high levels of structural heterogeneity in terms of the performance and capabilities of large and small firms. This paper explores the interaction of these different industry segments by analysing whether trans-Latins, through the dynamics of their respective value chains, exert a positive influence on the competitiveness of SMEs in their home countries. We also identify obstacles that hinder the success of SMEs in these ventures and draw some policy lessons to improve the participation of SMEs in value chains that are dominated by trans-Latin investment in Asia.

Our research is based on four case studies of Argentine firms with investments in Asia (the corresponding sector is included in parenthesis): Tenaris (steel), IMPSA (metallurgy), Arcor (foodstuffs) and Grupo Bagó (pharmaceuticals). Interviews were conducted with staff from these firms in order to learn more about the following subjects: (a) the extent to which local SMEs supply goods and services for the firms' foreign direct investment (FDI) operations; (b) the availability of SMEs that have the potential to become efficient suppliers for their value chains; (c) whether SMEs have had to adapt to new technology and business requirements to participate in their value chains and whether Asian markets require specific adaptations that need to be transmitted to suppliers; (d) whether large firms offer technical assistance to their suppliers; (e) whether participation in value chains helps SMEs to increase their technological and marketing capabilities and

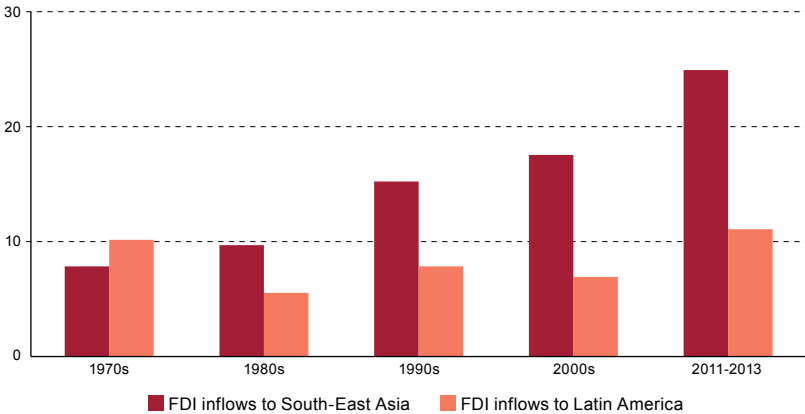
enhance their export potential, and if so, through what mechanisms?; (f) the obstacles that prevent a better integration of SMEs in value chains governed by trans-Latins operating in Asia; and (g) the policy instruments that could help to improve that integration.

Section A of the paper provides a brief analysis of FDI flows between Asia and Latin America and of trans-Latin investment strategies. Section B presents the four case studies. Finally, some conclusions and policy lessons are discussed in section C.

A. Foreign investment flows between Asia and Latin America: the main trends

The participation of East and South-East Asia in global FDI inflows increased steadily after 1970.³ The share for that region (excluding Japan)⁴ in total FDI inflows grew from 8% in the 1970s to 10% in the 1980s, 15% in the 1990s and 18% in the 2000s (see figure V.1). The trend continued between 2011 and 2013, reaching 25% of total FDI inflows, according to the United Nations Conference on Trade and Development (UNCTAD). The region currently receives around 50% of all FDI going to developing countries, versus 36% in the 1970s.

Figure V.1
FDI inflows to South-East Asia and Latin America
(Percentages of global FDI)



Source: Prepared by the authors, on the basis of data from the United Nations Conference on Trade and Development (UNCTAD).

³ We focus on these regions because they are the main targets of trans-Latin FDI operations, as discussed below. Consequently, in this paper we use the term Asia to refer to all Asian countries except those in the Middle East and Oceania, unless stated otherwise.

⁴ Adding Japan makes little difference to these figures, as this country is a small FDI recipient (0.7% of total world inflows in the 2000s).

China, Hong Kong Special Administrative Region (SAR) of China and Singapore are, by far, the largest FDI recipients within South-East Asia, accounting for 33%, 22% and 16% of total FDI inflows to the region between 2011 and 2013, respectively. Other relevant destinations include India (8%), Indonesia (5%), Malaysia (3%), the Republic of Korea (3%), Thailand and Viet Nam (more than 2% each).

East and South-East Asia receive market-seeking, efficiency-seeking and strategic asset-seeking investments.⁵ While in some countries labour costs are a relevant factor for FDI attraction, in other cases the main drivers are related to the size of the domestic markets, the availability of specialized human capital and the level of technological capabilities. East and South-East Asian countries are well integrated in global value chains, not only in the manufacturing industry but also in the services sector (see Backer and Miroudot, 2013). Moreover, an upgrading process within those chains is visible in many cases. For instance, China and India are now attracting significant FDI operations aimed at undertaking research and development (R&D) activities (Guimon and Agapitova, 2013).

Asia's integration into GVCs is driven not only by investments by Western multinationals, but also by the increasing role of Asia as source of FDI outflows. The share of East and South-East Asia in global FDI outflows grew from merely 0.4% in the 1970s to 4% in the 1980s, 8% in the 1990s and around 10% during the 2000s (see figure V.2). Mirroring the trends of FDI inflows, the relevance of the region as a source of FDI outflows significantly increased in recent years, reaching almost 20% in 2011–2013. The inclusion of Japan would raise this figure to 28%, according to UNCTAD data.

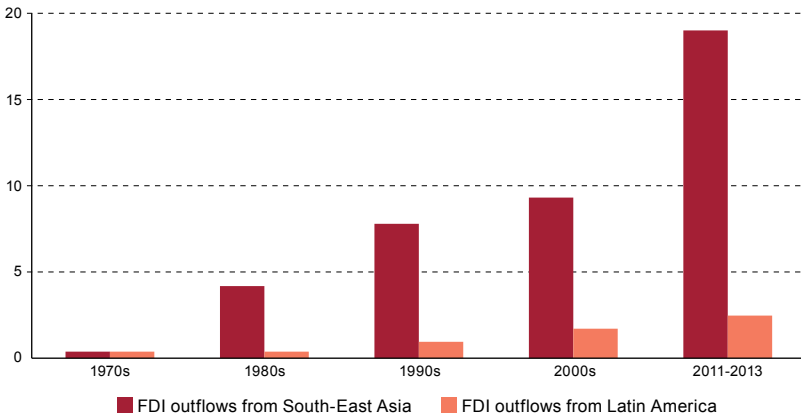
Latin America's share of global FDI inflows was around 10% during the 1970s. The share fluctuated between 6% and 8% over the subsequent three decades and then jumped to 11.5% in the last three years, while South America's share reached 9% in 2013 (see figure V.1). In the last few years, Mexico has received the bulk of regional FDI inflows, followed by Brazil, Chile, Colombia, Peru and Argentina.

In contrast, FDI outflows from Latin America are much smaller and have grown less than those from Asia. Regional outflows accounted for barely 1% of global outflows in the 1970s, but grew to around 3% in the last three years (see figure V.2).⁶

⁵ Market-seeking FDI aims to supply the local market of the host country and later those of neighbouring countries. Efficiency-seeking FDI includes three types of investments: those that seek to reduce costs by transferring production to locations with lower labour costs; those aimed at rationalizing the multinational corporation's operations; and those aimed at benefiting from specific assets of economies. Strategic asset-seeking FDI corresponds to operations in which a firm looks for strategic (tangible or intangible) assets that are critical to their long-term development, but not available at home (see Dunning, 1993).

⁶ The contribution of Argentina to Latin America's FDI outflows was small (between 2% and 4%) both in the 1980s and in 2001–2013. In the 1990s, however, that figure exceeded 25%.

Figure V.2
FDI outflows from South-East Asia and Latin America
(Percentages of global FDI)



Source: Prepared by the authors, on the basis of data from the United Nations Conference on Trade and Development (UNCTAD).

The large contrast between Asian and Latin American FDI outflows is explained by the fact that the former has more large multinational corporations than the latter. Specifically, 67 of the largest 100 multinational corporations from developing countries are from East and South-East Asia (18 from Hong Kong SAR, 12 from China, 10 from Taiwan Province of China, 9 from Singapore, 7 from India, 6 from the Republic of Korea, 4 from Malaysia and 1 from the Philippines) versus 11 firms from Latin America⁷ (5 from Brazil, 4 from Mexico and 1 each from Argentina and the Bolivarian Republic of Venezuela).⁸ ECLAC (2014) finds a similar pattern, although with somewhat smaller differences between the two regions (62 from East and South Asia and 21 firms from Latin America, including 8 from Brazil, 6 from Mexico, 4 from Chile, 2 from Argentina and 1 from the Bolivarian Republic of Venezuela).

The growth of Latin American FDI outflows over the last two decades is due, in part, to the adoption of structural reform programmes and more outward oriented economic strategies. These include trade

⁷ Argentina pioneered FDI outflows in the twentieth century. This and other Latin American countries (the Bolivarian Republic of Venezuela, Brazil, Colombia and Mexico) were involved in the first wave of FDI outflows from developing countries, which took place in the 1960s and 1970s. It consisted mainly of market-seeking FDI, motivated by the existence of trade barriers in host countries (Lall, 1983). In the 1980s, Latin America lost ground vis-à-vis Asia during the second wave of outward FDI from developing countries (Dunning, Van Hoesel and Narula, 1997).

⁸ Another eight firms in the ranking are from other parts of Asia (Kuwait, Qatar, Saudi Arabia, Turkey and the United Arab Emirates). Ten firms are from Africa (South Africa, Algeria and Egypt), and four are from the Russian Federation.

liberalization, privatization and deregulation in most Latin American countries in the 1990s. In the last decade, many countries in the region rejected deeper neoliberal strategies, while only a few reversed them (for example, the Bolivarian Republic of Venezuela).

These reforms increased competitive pressures on domestic firms that were at the same time affected by changes in the global economic landscape, including the emergence of new economic powers (such as China), the surge of multinational, regional and bilateral agreements and disciplines and the consolidation of a new organization of global production and trade in GVCs. The increasing fragmentation of production at the global or regional scale and the corresponding outsourcing of non-core activities by large firms characterize this new organization. Simultaneously, international trade was transformed from trade in goods to trade in tasks (intermediate goods and services; see Baldwin and Robert-Nicoud, 2010).

In this scenario, an increasing number of Latin American firms had to define an internationalization strategy via FDI not only for their expansion, but also for their own survival. Essentially, they had to buy or be bought. They therefore invested abroad to acquire a portfolio of locational assets in order to maintain or strengthen their competitive position in the global marketplace.

However, large Latin American firms are often small compared with their peers from developed and even developing Asian countries. This challenges their internationalization processes. Moreover, trans-Latins are also affected by the weaknesses that characterize their home economies, such as relatively small, incomplete and shallow domestic capital markets that are mostly geared towards short-term finance, educational systems that are not generally producing the kind (and amount) of staff and management required for competing in open economies, weak innovation systems and poor infrastructure. All of these factors contribute to explaining why FDI from Latin America is below that of Asia and why there are fewer trans-Latins than Asian multinationals.

Another key difference between trans-Latins and their Asian peers is the nature of their investments. Trans-Latin investments tend to be concentrated in a few basic industries (such as hydrocarbons, extractive mining, steel and cement), food and beverages, and some services (mainly transport, retail, electricity and telecommunications) (ECLAC, 2014). In contrast, Asian multinationals invest mostly in sectors such as automobiles, chemicals and high-tech industries.⁹ Also, Asian

⁹ Nineteen out of the 67 main Asian transnational corporations operate in the information technology, electronics and telecommunication sectors, versus only two of the trans-Latins (UNCTAD, 2013).

multinational corporations increasingly focus their activities on efficiency-seeking or strategic asset-seeking strategies, whereas the trans-Latins search for natural resources or markets.

Nevertheless, some trans-Latins have reached global excellence in their respective industries. Examples include Tenaris in Argentina, Cementos Mexicanos (CEMEX) in Mexico and Petrobras in Brazil. Others compete in activities subject to fast technological change or competition through design and innovation. These include Empresa Brasileira de Aeronáutica (Embraer) in the aeronautical sector (Brazil) (see Goldstein, 2002), Stefanini in information technology (Brazil), América Móvil in telecommunications (Mexico), Weg in electrical engineering and automation technology (Brazil) and IMPSA in energy equipment (Argentina). Moreover, although most outward FDI in Latin America has been intraregional, in recent years some trans-Latins have increased their investments outside the region, and some can be considered truly global, such as Arcor (Argentina), Alfa, Mexichem, GRUMA and Bimbo (Mexico) and Vale, Odebrecht, Marcopolo, JBS, BRF, Votorantim and Gerdau (Brazil).

Asia is not yet a major destination for most trans-Latins. Data from some countries with geographically disaggregated information on FDI outflows suggest that Asia's share in Latin American outward FDI is very low. Moreover, Latin America remains a negligible source of FDI inflows for Asian countries. This could be slowly changing, however. According to a report by Fundação Dom Cabral (2013), there are more than 20 Brazilian firms in China, which makes China the first destination for Brazilian trans-Latins outside the Americas (in terms of number of affiliates). Similarly, 17 of the 262 subsidiaries of the top 20 Mexican trans-Latins are located in Asia (Basave, Kunhardt and Gutiérrez Haces, 2013).

The four Latin American countries with the most outward FDI in Asia are Argentina, Brazil, Chile and Mexico. In the case of Argentina, in 2011 the top 23 trans-Latins had 287 affiliates in 62 foreign countries; 63% of those were located in Latin America and 7% in East Asia and the Pacific.¹⁰ The Argentine multinationals with a presence in Asia are Techint (steel, oil and construction), Arcor (food), IMPSA (machinery and equipment), Grupo Bagó (pharmaceuticals), Grupo Insud (pharmaceuticals) and Tecna (engineering and construction) (Nofal, 2011).

Brazilian multinationals have the largest involvement in the Asian economy among Latin American companies. According to Fundação Dom Cabral (2013), China ranks sixth among the top destinations for Brazilian multinationals. Brazilian companies are also present in Hong Kong SAR,

¹⁰ Another 3% were located in North Africa and the Middle East and 2% in Eastern Europe and Central Asia.

India, Indonesia, Japan, Malaysia, the Philippines, the Republic of Korea, Singapore, Taiwan Province of China and Thailand, as well as in Middle Eastern countries such as Iran, Israel, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia and the United Arab Emirates. All major Brazilian multinationals currently have at least one affiliate in Asia. The mining company Vale, for instance, has affiliates in 31 countries, including large investments in China and other East Asian and Middle Eastern countries such as India, Indonesia, Japan, Malaysia, Oman, the Philippines, the Republic of Korea, Singapore, Taiwan Province of China, Thailand and the United Arab Emirates. One of the most emblematic Brazilian investments is that of the airplane manufacturing company, Embraer, which manufactures jets in Harbin, China, in a joint venture with a local company.

The top 20 Mexican multinationals have 262 subsidiaries overseas, with Latin America having the highest concentration of affiliates, followed by North America, Europe and Asia (Basave, Kunhardt and Gutiérrez Haces, 2013). The firms with investments in Asia include the large cement producer CEMEX, which has investments in Bangladesh, China, Israel, Malaysia, the Philippines, Thailand and the United Arab Emirates; the diversified groups Alfa, Kuo and Xignux; GRUMA and Bimbo (food and beverages); and the chemical firm Mexichem.

Most Chilean trans-Latin companies concentrate their assets in Latin America, and only two have a truly global presence. SQM (mining) has affiliates in China, India, Japan, Thailand and the United Arab Emirates and Molybmet (metals) has a processing facility in China (Muñoz, Pérez Ludeña and Poniachik, 2013).

Table V.1 shows a non-exhaustive list of Latin American companies with investments in Asia. The list includes examples of both firms with production facilities and firms with trade and technical assistance activities or sales offices. While these two types of investment do not have the same implications in terms of value added and GVC logic, both are included as they constitute important steps in the internationalization process of firms. Some of the projects are fully owned by trans-Latins while others are joint ventures with Asian partners. Brazil has the largest number of firms investing in Asia, and, as expected, the main recipient is China. India is also an important host country for Latin American firms. Other East Asian countries with investments from Latin America include Hong Kong SAR, Indonesia, Japan, Malaysia, the Philippines, the Republic of Korea and Singapore. There are also many affiliates in Middle Eastern countries. Regarding industries, the pattern is somewhat diversified, but food and beverages clearly stands out as the sector with the most investment. Other important sectors are engineering and construction, steel and metallurgy, automobile parts and transport vehicles, banks, and oil and mining.

Table V.1
Latin American firms with investments in Asia

Home country	Company	Industry	Host countries with	
			Production facilities	Trade and technical assistance activities or sales offices
Argentina	Techint	Steel; engineering and construction; oil	China, Indonesia, Japan, Kazakhstan, Qatar, Republic of Korea, Saudi Arabia, United Arab Emirates	Bahrain, India, Iraq, Malaysia, Singapore, Turkmenistan, Viet Nam
	IMPSA	Metallurgy	Malaysia	China, Hong Kong SAR, India
	Grupo Bagó	Pharmaceuticals	China (under construction), Pakistan	
	Arcor	Food and beverages		China
	Tecna	Construction and engineering		Oman, Saudi Arabia
Brazil	Grupo Insud	Pharmaceuticals	China, India	Indonesia, Malaysia, Philippines, Singapore, Thailand, Viet Nam
	Vale	Mining	China, Indonesia, Japan, Malaysia, Oman, Philippines, Republic of Korea, Taiwan Province of China	India, Singapore, Thailand, United Arab Emirates
	Petrobras	Oil	China, Japan	Singapore
	Votorantim	Mining and metallurgy	China, India	Japan
	Embraer	Aircrafts	China	Singapore, United Arab Emirates
	Odebrecht	Engineering and construction	Republic of Korea, United Arab Emirates	
	Marfrig	Food	China, Malaysia, Republic of Korea, Thailand	
	Gerdau	Steel	India	
	Weg	Electrical equipment	China, India	Indonesia, Japan, Malaysia, Republic of Korea, Singapore, Thailand, United Arab Emirates
	Banco do Brasil	Banking		China, Hong Kong SAR, Japan, Republic of Korea, United Arab Emirates
Chile	Banco Bradesco	Banking		Hong Kong SAR
	Sabó	Automobile parts	China	Japan
	Marcopolo	Transport vehicles	China, India	
	Randon	Trucks and automobile parts	China	United Arab Emirates
	Caixa Económica Federal	Banking		Japan
	Ultrapar	Oil		China

Table V.1 (concluded)

Home country	Host countries with		
	Company	Industry	Production facilities
Brazil	Magnesita	Non-metallic minerals	China, Taiwan Province of China
	Minerva	Food	China, Iran, Lebanon
	Suzano	Pulp and paper	China
	Stefanini	Information technology	China, India, Philippines
	Artecola	Adhesives and laminates	China
	BRF	Food	United Arab Emirates
	JBS	Food	China
	lochpe-Maxion	Automobile parts and railway equipment	China, India, Thailand
	Andrade Gutierrez	Diversified	China, Iran, Qatar, Saudi Arabia, United Arab Emirates
	Sociedad Química y Minera (SQM)	Chemical and mining	China, India, Thailand
	Molybret	Chemical	China
	Banco de Chile	Banking	China
Chile	Antofagasta	Mining	China
	CEMEX	Cement	China
	Bimbo Group	Food and beverages	Bangladesh, China, Israel, Malaysia, Philippines, Thailand, United Arab Emirates
	GRUMA	Food and beverages	China
	Kuo	Diversified	China, Malaysia
	Mexichem	Chemicals	China, India
Mexico	Alfa	Diversified	China, Japan
	Carso Group	Automobile parts, electrical equipment	China, India
	Xignux	Diversified	China
			India
			Japan, United Arab Emirates
			Iraq, Qatar, Saudi Arabia

Source: Prepared by the authors, on the basis of the companies' websites.

B. SMEs in Argentine trans-Latin value chains

This section presents four case studies of Argentine trans-Latin firms with investments in Asia: Arcor (foodstuffs), Tenaris (steel), IMPSA (metallurgy) and Grupo Bagó (pharmaceuticals).¹¹ On the basis of interviews with key personnel, a description is given of the firms' activities, strategies and relations with SMEs.¹²

1. Arcor

Arcor, which is currently the main food-producing company in Argentina, was founded in 1951 in the Province of Córdoba.¹³ The firm began as a confectionery manufacturer (candies) and later expanded into other sectors of the food industry (including jams and marmalades, sauces, canned tomatoes, canned vegetables, canned fish, beverages, dressings, oils, fruits, cookies, crackers, chocolate and ice cream). At the same time, it also started a process of geographical expansion, at both the national and international levels. Its first exports were to the United States in the late 1960s.

Arcor currently owns 39 industrial plants, five of which are in Brazil, three in Chile, one in Mexico and one in Peru (the others are located in Argentina). The firm has sales offices in the Bolivarian Republic of Venezuela, Canada, China, Colombia, Ecuador, Paraguay, the Plurinational State of Bolivia, South Africa, Spain and the United States. According to company information, it is the world's largest candy manufacturer, and its products are sold in more than 120 countries. The firm is vertically integrated in the production of some inputs, including flexible and corrugated cardboard containers, milk, fructose, glucose, cereal ethanol and sugar.

Total sales increased from US\$ 800 million in 2003 to US\$ 3.4 billion in 2013, when exports amounted to US\$ 340 million. Total employment in 2013 was around 20,000 people, 98% of whom are working in Latin America.

Recently Arcor has entered into joint ventures and strategic alliances with key partners: (i) an agreement with the French multinational Danone to jointly manage Bagley Latinoamérica S.A., a pioneer in Argentina's food industry that was founded in the nineteenth century; (ii) a co-branding agreement with Coca-Cola for the Argentine market; and (iii) a joint venture with another trans-Latin, Bimbo, to jointly

¹¹ For a deeper analysis of the investment strategies of Tenaris and IMPSA in Asia, see López, Ramos and Torre (2012).

¹² See the annex for a list of the people interviewed for this research.

¹³ For a historical account of Arcor and its current business strategies, see Kosacoff and others (2014).

manage Mundo Dulce, a firm created with the aim of manufacturing sugar and chocolate confectionery in Mexico to supply the domestic and export markets.

Regarding its operations in Asia, the Shanghai sales office opened in 2006. Its goal was to centralize operations in Australia, China, Hong Kong SAR, New Zealand, the Philippines, the Republic of Korea, Taiwan Province of China, Thailand, Viet Nam, and the rest of South-East Asia. In 2011, it became a representation office. Arcor has also opened home offices in South and East Asia, including those located in Lucknow (India), Bangkok (Thailand) and Ho Chi Minh City (Viet Nam), under the concept of trade marketing (Kosacoff and others, 2014).

Arcor sales in Asia amount to around US\$ 50 million, with US\$ 18 million corresponding to West Asia and India and US\$ 30 million to East Asia. Sales to the former region have increased 440% since 2002. The products sold in this region include chocolates, confectionery and crackers. Although these products are essentially the same as those sold in other regions, some adaptations were needed in terms of flavours and packaging. The Shanghai office currently manages the repackaging operations, which were previously carried out by the importers (Kosacoff and others, 2014).

According to company information, Arcor has about 16,000 suppliers, of which 95% are SMEs (Arcor, 2014). Almost 10,000 SME suppliers are located in Argentina, nearly 3,800 in Brazil, 2,000 in Chile and more than 500 in Mexico. Around 80% of these suppliers provide services, including equipment and machinery maintenance, cleaning, security, transport, consultancy, IT and insurance. In general, Arcor's supply policy aims to avoid maintaining captive suppliers, as providing to different companies exposes them to more competition and enlarges their learning opportunities. Relations with suppliers are increasingly being managed through the ArcorBuy.com business-to-business portal.

In 2007 (most recent information available), Arcor bought more than 35,000 items (including raw materials, packaging, services and inputs). No single supplier provided more than 2% of the company's total acquisitions that year. Some of these suppliers are involved in joint product development strategies when they have specific know-how, which is often the case in items such as packaging materials or some industrial inputs.

Suppliers are selected, evaluated and contracted on the basis of internal procedures defined by Arcor, which are related to products, processes and facilities. The selection is based not only on cost, but also on quality, safety, delivery times, and other aspects. Arcor aims to build long-term relations

with its suppliers,¹⁴ although there are continuous efforts to identify new providers in the different regions where the firm is operating. Arcor organizes a business meeting with prospective suppliers once a year, with training activities to test their capacity for becoming actual suppliers. The main limitations of local suppliers are not so much their technical skills, but their lack of scale and inability to meet high volume requirements.¹⁵

In 2013, 533 quality and safety audits were carried out on Arcor suppliers. The audits use a “Supplier Potential Index” that was specifically developed to evaluate the reliability of Arcor’s suppliers. Two thirds of the audited firms received a score above 70 points (on a 1-100 scale) in 2013. The number of audits has increased over the years, from 178 audits in 2007-2008 to 235 in 2009-2010. The percentage of approved audits has also risen, with a 60% approval rate in 2007-2008.¹⁶ If a supplier does not achieve the minimum score, Arcor’s quality division works with the company to jointly elaborate plans to solve the detected problems. Arcor also conducts international audits of suppliers located outside Argentina. Suppliers that have been certified by some of the norms and acknowledged by the Global Food Safety Initiative (GFSI) do not need to go through the audit procedure. Arcor’s staff also carefully analyse the legal requirements of foreign markets in terms of health and safety and offer training and assistance to its suppliers to ensure that they are able to meet them.

A special programme exists for toll manufacturers (called “à façon” suppliers in Argentina), which produce a branded product of Arcor or contribute to producing it by assuming the responsibility of some stages of the value chain. Specific procedures and norms exist for selecting, qualifying, hiring and monitoring this group of suppliers. Almost 60 reports evaluating these suppliers were made in 2013. All of these suppliers have been audited to verify their compliance with social and environmental principles. However, due to the greater difficulties involved in controlling these suppliers (especially in a risky area from the point of view of health procedures, for example, in relation to food), the toll manufacturing modality is losing weight in Arcor’s supply structure, and it is now mainly reserved for meeting demand peaks.

Other programmes promote agricultural sustainability through initiatives oriented towards guaranteeing quality, safety, social and environmental standards in the production of agricultural inputs used by Arcor.

¹⁴ This commitment is illustrated by the fact that during the severe 2002 crisis that affected Argentina’s economy, the firm made an effort to honour its contracts with providers and even facilitated their access to some critical inputs (Kosacoff, 2014).

¹⁵ Arcor’s sustainability report, 2013 (Arcor, 2014).

¹⁶ Training was given to the personnel that performed the audits to guarantee the reliability and comparability of the results.

A corporate social responsibility (CSR) programme for suppliers was launched in 2007. The main objectives of the programme are as follows: (i) to align suppliers with the company's CSR practices and contractual policies; (ii) to guarantee minimum common standards in the company's value chain based on sustainability; and (iii) to increase and improve Arcor's supply sources while favouring the inclusion of vulnerable groups. The programme has three main strategies: awareness and training; progressive CSR incorporation into the supplier recruitment policy; and specific responsible purchasing projects.

According to information provided by the company, more than one third of its Argentine suppliers have adhered to Arcor's Fundamental Principles for Sustainable Management, which is inspired by the United Nations Global Compact objectives and the International Labour Organization's norms. Between 2008 and 2013, almost 6,000 people attended activities organized by Arcor to provide training on sustainability issues.

More recently, a sustainability strategy for 2013-2015 has been adopted. The strategy aims to identify critical issues in all stages of the value chain. New sustainability criteria have been incorporated in the processes of selection, evaluation and development of suppliers. The incorporation of environmentally innovative practices by suppliers is one of the objectives of the programme. Reviews, plans and strategies oriented to sustainability goals were jointly developed with suppliers. Furthermore, efforts have been made to replace key inputs with more environmentally friendly ones (for example, in the case of paper). Topics relating to food quality and safety, labour relations and the prevention and eradication of child labour are also part of the strategy.

A specific sustainability programme was developed for Arcor's transport providers, and 21 firms were presented with sustainability plans in 2013 as a result of training activities organized under the programme. Other assistance and training activities have also undertaken to disseminate best practices and foster efficiency gains within Arcor's logistics and transport value chain.

With regard to inclusion objectives, a special programme incorporates suppliers belonging to poor or vulnerable sectors. Arcor grants technical, commercial and management support and gives training to potential suppliers belonging to those groups. As a result of this programme, 20 firms were incorporated into the company's supplier base in 2013, and all Argentine plants made inclusive purchases, including textiles, handicraft gifts, services and packaging materials. In turn, seven microenterprises were incorporated into a special supplier development programme organized jointly with public technological institutions

such as the National Institute for Agricultural Technology (INTA) and the National Institute of Industrial Technology (INTI). This programme includes access to specific credit sources, training and technical, managerial and marketing assistance.

Arcor also participates in (and promotes) supplier training activities organized by the Argentine Industrial Association (UIA), which include the provision of market, regulatory and technological information.

Finally, in Asia, Arcor is looking for suppliers of inputs, raw materials and capital goods in that region. Although we were not able to gather precise information on this matter, an area in which some Asian operations have materialized is packaging. In general, Arcor is interested in finding cheaper sources of supply in East Asia for its different purchase items. Because the products sold by Arcor in Asia are the same as those sold in Argentina and other countries, the suppliers could be similar. However, both packaging and products had to be adapted to the local markets, not only to translate the respective information, but also to adapt to consumer preferences (for example, communication styles, colours and packaging materials) and legal requirements. For example, the company had to change the packaging for one of the chocolates sold in Asia in order to use the cold-seal technique, which allows for a better conservation of the product (and thus generates more trust from the consumer). Changes in the colour of some candies were also required to adapt to consumer tastes in Asia. Easy-opening cans had to be used for sauces since Japanese consumers do not use can openers. Finally, some Asian markets, such as Japan, have stricter food safety standards than Latin America, so the traceability of some inputs (such as oils) had to be improved. Consequently, the company had to replace inputs and change some packaging processes, which required suppliers to implement productive changes, which were jointly developed with Arcor.

2. Tenaris (Techint Group)

The Techint Group was created in 1945 in Italy as Compagnia Tecnica Internazionale but soon transferred its operations to Argentina. The company's founder, Agostino Rocca, saw opportunities in providing the local state oil company, Yacimientos Petrolíferos Fiscales (YPF), with seamless tubes for its rapidly increasing network of pipelines in Southern Argentina. Seamless tubes are now the core of operations at Tenaris, which is currently the largest company in the Techint group. Tenaris has become a lead provider of goods and services for the global energy industry.

Techint is also engaged in other activities. In the 1960s, it started providing engineering and construction services to the Argentine state;

this business is currently managed by Techint E&C (Engineering & Construction). This experience helped Techint enter the international construction business, focusing its activities on the construction of pipelines and large infrastructure projects in developing countries (Castro, 2008). Techint also entered the oil industry (now managed by Tecpetrol) and invested in different public utilities firms, mainly during Argentina's privatization process in the 1990s. The group also made investments in the flat steel business, which at present is developed by Ternium. Ternium owns plants (alone or as joint ventures) in Argentina, Brazil, Colombia, Guatemala, Mexico and the United States. It also acquired a plant in the Bolivarian Republic of Venezuela, which was later renationalized by the Venezuelan government.

At present, Techint is a multinational corporation that employs almost 60,000 people worldwide, and its revenues surpass US\$ 25 billion. Apart from Tenaris, Ternium, Tecpetrol and Techint E&C, the group owns Tenova (previously called Techint Technologies), a firm oriented to providing technology for the metal and mining industries, and Humanitas, dedicated to the provision of medical services, both headquartered in Italy. It is Argentina's largest industrial group and the leading Argentine multinational corporation.

The internationalization of Tenaris (whose original name in Argentina was Siderca) started in late 1970s with its first exports to China and the former Soviet Union. In the 1990s, the firm acquired facilities in the Bolivarian Republic of Venezuela, Brazil, Italy and Mexico. The Venezuelan plant was later re-nationalized by the government. In 2000, Siderca engaged in a joint venture with NKK Corporation, one of Japan's leading steel companies. In addition, Tenaris currently has manufacturing plants (either wholly owned or joint ventures) in Canada, China, Colombia, Ecuador, Indonesia, Nigeria, Romania, Saudi Arabia, Scotland and the United States. It also has five R&D centres employing more than 230 scientists and engineers in Argentina, Brazil, Italy, Japan and Mexico. Finally, the firm has commercial offices and service centres in more than 30 countries, including Australia, Bahrain, Dubai, India, Iraq, Malaysia, Qatar, the Republic of Korea, Singapore, Turkmenistan and Viet Nam.

Tenaris has complemented and specialized its industrial plants in terms of both products and regional markets. This has gone hand in hand with the creation of a complex commercial network, which sells not only goods but also associated services, in order to meet the needs of its different customers and demand segments. In 2013, it had almost 27,000 employees, and its sales amounted to US\$ 10.6 billion. Its annual manufacturing capacity reached 6.3 million tons of steel pipes, and the

company is listed on the stock exchanges of Buenos Aires, Mexico City, Milan and New York.

Asia's share in the firm's sales is still relatively low. In 2013, the East Asia and Oceania region represented 5% of total sales, while the Middle East and Africa accounted for 20%. In terms of personnel, Indonesia and Japan have the highest shares (3% and 2% of the firm's total personnel, respectively, in 2013). The region's importance for Tenaris has been growing in the last few years.

Tenaris has been exporting to China since the 1970s. In the early 1990s, the company opened offices in Beijing and Singapore. The first was entirely focused on the Chinese market, while the second was aimed at the Indonesian and Malaysian markets. Later, Siderca signed a joint venture agreement with JFE Corporation creating NKK Tubes, taking over the seamless tube division of NKK Corporation, with Siderca holding 51% and NKK the remaining 49%. More recently, Tenaris invested in the construction of a manufacturing plant in Qingdao, which started operations in 2008. This is a wholly owned threading facility, with an annual capacity of 50,000 tons of seamless pipes; it also supplies Chinese customers with premium connections. In 2009, Tenaris expanded its operations to South-East Asia by acquiring Seamless Pipe Indonesia Jaya (SPIJ), an Indonesian steel pipes company. Today Tenaris operates two manufacturing plants in Indonesia; their main activity is the local processing of oil tubes with heat treatment and premium connection threading facilities.

With regard to suppliers, Exiros is the global procurement company of the steel business areas of the Techint Group and, according to Artopoulos (2006), it is a benchmark in Latin America in terms of e-procurement systems. During the fiscal year 2012/2013 Exiros purchased US\$ 8.3 billion in goods and services, of which half corresponds to Tenaris. It currently has 12,000 suppliers and employs 500 people. Exiros operations are divided by market (Europe; the Middle East and Asia; North America; Mexico and Central America; and the Southern Cone) and supplies (raw materials; steel making tools; materials; repair and operations; services; and turn-key investments).

Most suppliers hired by Exiros deliver their services inside Tenaris and Ternium mills, thus sharing the same safety and quality standards. This requires long-term partnerships and strong interactions with both suppliers and customers. Strict controls, timetables and targets are required to qualify as and remain an Exiros supplier.

Supplier development efforts began in the late 1980s. Their first objectives were related to implementing a just-in-time system and

ensuring that suppliers had ISO 9000 certifications. Training activities were organized to achieve these goals, and they included e-commerce and new technology modules (Artopoulos, 2006).

Current efforts to develop the supplier base of Techint are concentrated in the programme for small and medium-sized enterprises (ProPymes).¹⁷ This programme was created in 2003 in Argentina to help SMEs increase their exports and improve their performance in the domestic market. It was later extended to Mexico and the Bolivarian Republic of Venezuela.¹⁸

Since its inception, 660 clients and suppliers of Techint have participated in the programme, and almost 7,000 people from those firms have received training, including managers and white- and blue-collar workers). More than 430 assessments have been made, which have led to concrete technical assistance actions.¹⁹ In addition, more than 460 firms have participated in trade missions organized under the programme. Tenaris has also helped 22 SMEs get credits and subsidies from the Argentine Technological Fund (FONTAR) and provided support in terms of access to information, guidance for the presentation of projects and so forth. According to official information from Techint, since 2003 the firm's Argentine suppliers have exported over US\$ 130 million to Techint affiliates around the world.

Assistance provided by the ProPymes programme is organized under five main areas:

- Industrial management: (i) consultancy and improvement plans in safety, environmental protection and quality (including funding and assistance for obtaining ISO and other certifications); (ii) adoption of information and communications technologies (ICTs); (iii) product development (testing); (iv) linkages with the national innovation system; (v) process efficiency improvements; and (vi) logistics.
- Training and human resources: (i) training for clients and suppliers; (ii) improvements in human resource management practices; (iii) visits to Techint plants to transfer knowledge on products and processes; (iv) contact with experts; (v) support for the recruitment of young professionals; and (vi) cooperation in order to jointly detect needs and prepare customized training plans.

¹⁷ See [online] www.programapropymes.com/Paginas/Objetivos.aspx.

¹⁸ The programme was abandoned in the Bolivarian Republic of Venezuela when Techint investments were nationalized by that country's government.

¹⁹ Including logistics, safety, information and communications technology (ICT), certifications, human resources, training and processes.

- Financial: (i) credits to SMEs with the aim of improving productivity, expanding productive capacity and acquiring capital goods and modern technology; and (ii) counselling and guidance oriented to improving access to public financial instruments related to innovation and productivity improvements.
- Commercial: (i) trade missions; (ii) support for penetrating new markets through the joint development of new products; (iii) access to the global network of Techint offices to facilitate logistics and contacts; and (iv) identification of SMEs with potential to sell to other Techint firms around the world and to third-party international clients.
- Institutional: (i) contacts and linkages with sectoral and binational business chambers, banks and government divisions; (ii) direct contact with the Foreign Trade Development Programme of the Ministry of Foreign Affairs, in order to get information and assessment on trade missions, potential markets, and so forth; (iii) legal assessment in cases related to unfair trade practices and intellectual property issues; and (iv) development of research activities oriented towards planning future strategies.

Techint, in collaboration with the University of Bologna in Buenos Aires and the Argentine Industrial Association (the leading industrial federation in Argentina) have created the SME Observatory Foundation, a non-profit organization launched in 2003 that generates data and conducts research on SMEs in Argentina. The organization also engages in policy advocacy to improve the situation and prospects of its members.²⁰ The Observatory prepares sectoral and regional reports on the basis of its own surveys. The central objectives include improving access to credit, pushing large firms to provide supplier development actions and enhancing the decision-making and management practices of SMEs. The Observatory also disseminates case studies of successful SMEs in Argentina.

One valuable experience specifically related to Tenaris is the creation in 2002 of the Argentine Group of Suppliers of the Oil Industry, which includes around 80 SMEs selling goods and services for the oil and gas industry (which are also clients or suppliers of Tenaris).²¹ This group was created jointly with the Ministry of Foreign Affairs to help its members identify and take advantage of market opportunities abroad. As a result of this initiative, some firms have been able to generate business in the Middle East and other regions. Both group and individual visits have been made to East Asia, but so far no sales have materialized for that region.

²⁰ See [online] www.observatoriopyme.org.ar.

²¹ Its members offer metal manufactures, chemical products, industrial safety equipment and garments, engineering services and industrial software, among other products.

Tenaris offers help to firms wishing to do business in Asia, including those not related to the oil industry. Examples of this activity include facilitating the use of its meeting rooms; providing information and contacts with clients, suppliers and consultants; and arranging international travel. They have also agreed to make joint shipments with other firms to the Middle East, the Russian Federation and China.

Apparently, no Argentine SMEs in the oil industry are currently selling in China, owing both to their own limitations in terms of scale and resources and to cultural distance and regulatory obstacles. However, Tenaris suppliers make indirect exports to its plants in Asia, to take advantage of their specific know-how in areas such as tools or other key inputs, including lamination cylinders, mandrels, pumps, valves, inserts and plugs.

3. IMPSA

IMPSA, the main firm of the Pescarmona group, traces its origins to 1907, when Enrique M. Pescarmona opened a metallurgical shop in Mendoza, with the intention of providing machinery and spare parts to the growing wine industry. The company developed rapidly and became an industry leader within a few years. In 1946, the Pescarmona family created Construcciones Metálicas Pescarmona (CMP) to design and build metal structures. In 1965, the family's assets and liabilities were merged into Industrias Metalúrgicas Pescarmona S.A. (IMPSA). The new company focused its business on the provision of electrical turbines to hydroelectric plants, an activity that gained strength as the Argentine State engaged in the construction of large energy plants in the late 1960s and early 1970s.²²

Currently, IMPSA has five business units, three of which are in the energy sector:²³

- IMPSA Hydro, IMPSA Wind and IMPSA Energy, which focus on sustainable power generation²⁴
- IMPSA Process, an equipment manufacturer for processing industries
- IMPSA Environmental Services, which is dedicated to waste management and treatment

²² The Pescarmona group also engaged in other businesses, such as telecommunications (IMPSAT, which was later acquired by Global Crossing) and the wine industry.

²³ For an analysis of the firm's internationalization strategy, see Calbosa (2012).

²⁴ IMPSA Energy is in charge of the financial and contractual arrangements for the operations of the other units of the group and invests in different wind farms.

Revenues followed an upward trend from US\$ 220 million in 2007 to US\$ 1.150 billion in 2011 and then fell to US\$ 750 million in 2013. Pescarmona presently employs more than 8,000 workers and has two manufacturing centres in Argentina, two in Brazil (where most recent investments have been concentrated)²⁵ and one in Malaysia (which produces hydromechanical components and turbines).

The company's internationalization strategy was based on several strategic assets, including the capabilities of their human resources in the engineering area; the development of business models for delivering services associated with the sale of capital goods; their accumulated technology and innovation capabilities; and their partnerships with leading foreign firms (Kosacoff, 1999; Barbero, 2010). For example, the company's technological capability and experience in the supply of nuclear power stations has generated new business for IMPSA as Argentina has recently reactivated plans for constructing new nuclear power plants.

The first operations of IMPSA in Asia were related to the delivery of port cranes and the execution of hydroelectric projects in China in the mid-1980s. The company's regional headquarters was opened in Malaysia, and there was a big expansion of activities in Asia in the 1990s. This process culminated in the establishment of a joint venture with Malaysian investors and the installation of a manufacturing plant in the town of Lumut to produce cranes, generators, turbines and components. In addition to its businesses in Malaysia, the company has completed several hydroelectric projects in China, India, Indonesia, the Philippines, Taiwan Province of China and Thailand. It also delivered more than 100 cranes and related services such as operation and maintenance, retrofits and upgrades.

Asia became increasingly important for IMPSA as a share of its global activities. By 2004, about 30% of the company's revenue originated from the Asian region. The following years saw a change in the firm's strategy in Asia, however. The company's goal of positioning itself as a world leader in the renewable energy business led IMPSA to restructure its port systems division, IMPSA Port Systems (IPS), which operated mainly in Latin America and South-East Asia. In 2008 the division was split off from IMPSA and began to operate as a separate company under the name South Asia Logistic Services Limited. The crane business was later abandoned, due to fierce competition from low-cost Chinese suppliers.²⁶

²⁵ Almost 75% of the total assets of IMPSA are located in Brazil.

²⁶ One of these successful Chinese crane providers is a former subcontractor of IMPSA.

After the restructuring, Asia's share of the company's global revenues fell. The region currently represents barely 2% of the sales worldwide. The present structure of IMPSA in Asia includes the Lumut plant, the Asian headquarters in Kuala Lumpur and offices in Hong Kong SAR, New Delhi and Shanghai (the Jakarta and Manila offices have been closed). An agreement was signed with PetroVietnam to manufacture wind turbines in Bin Thuang, Viet Nam, but the project has not yet entered into operation.

Currently, IMPSA suffers from severe financial problems due to delays in payment by some clients in Brazil and the Bolivarian Republic of Venezuela. Hence, it has requested assistance from the Argentine government, while trying to attract new partners and selling wind farm parks in Brazil.

IMPSA has a cluster of around 600 SMEs that regularly provide goods and services for its hydro division in Argentina (IMPSA has a total of about 4,500 active Argentine suppliers). Moreover, there are around 2,000 SMEs working for the wind division in Brazil alone. IMPSA had to create some of these suppliers practically from the bottom up. When it set up its first wind park in Brazil in 2009, there were only two suppliers capable of making towers for wind turbines. They charged very high prices and did not meet the company's quality standards. Instead of vertically integrating the production of these towers, IMPSA sent managers from Argentina to train suppliers to weld and roll metal for towers. Although this was an expensive and slow strategy, IMPSA executives state that in the long run, it was the best way to meet the local supply requirements imposed by the Brazilian Development Bank (BNDES), which gave IMPSA many loans (Friel, 2014).²⁷

There is also a cluster of specialized suppliers and developers around the wind farm in Mendoza. There were 60 firms in this cluster in 2012, and IMPSA plans to reach 500 domestic suppliers for its wind division in Argentina by 2020, including the provision of electrical and control systems, turbines, towers, metallic structures and transformers. To achieve this goal, IMPSA is organizing specific technical assistance for SMEs, in conjunction with the National Institute of Industrial Technology and other firms that belong to the wind energy cluster in Argentina. Firms belonging to this cluster have obtained five grants from the Ministry of Science, Technology and Productive Innovation to develop innovative projects.²⁸

²⁷ These requirements have sometimes resulted in IMPSA having to buy expensive, low-quality inputs, as in the case of stainless steel (Friel, 2014).

²⁸ See [online] www.unsam.edu.ar/tss/unidos-por-el-viento.

The level of integration within the domestic markets is high for both the Argentine and Brazilian affiliates. About one third of the inputs are manufactured by IMPSA, and the other two thirds are purchased from domestic suppliers. In Malaysia, local integration is somewhat lower, although the fact that IMPSA has a production facility in that country and has developed local suppliers was a major factor for getting access to a significant share of that country's market in areas such as cranes. The Malaysian government was very interested in increasing the domestic content of IMPSA's operations (Friel, 2014).

IMPSA builds long-lasting relations with its suppliers and provides them with technical assistance, credit and training. According to those interviewed for this research, the presence of IMPSA helped to develop and transfer technological capabilities to suppliers in Malaysia and other Asian countries; however, we did not have access to specific information about this process. In turn, IMPSA requires its suppliers to meet quality, environmental and efficiency norms —some of which are established by IMPSA and others are based on market standards such as those of the International Organization for Standardization (ISO)— and undertakes periodic inspections to verify their compliance. IMPSA suppliers must also sign agreements committing not to hire child labour and guaranteeing a safe working environment for their workers, including the application of health and safety regulations, freedom of association and the absence of discriminatory treatment in the workspace. Awareness-raising, training and other types of capacity-building activities are undertaken with a view to pushing suppliers to incorporate the principles of the United Nations Global Compact, in which IMPSA participates. Systems to monitor the performance and commitment of suppliers in areas such as human rights and labour relations are implemented, including quantitative and qualitative metrics. Audits and other activities are also performed to monitor and improve the environmental performance of companies in the supply chain.

Each business unit implements different types of negotiation with its suppliers. In the case of IMPSA Hydro, every new project leads to a round of negotiations with its existing and potential new suppliers. In IMPSA Wind, long-lasting agreements are made in order to guarantee stable costs and delivery times (Calbosa, 2012). These contrasting approaches reflect differences between the two businesses in terms of the number and duration of their respective projects. In some cases, IMPSA creates ad hoc corporations jointly with their critical suppliers to guarantee the execution of large projects (Calbosa, 2012).

According to Friel (2014), the competitive advantage of IMPSA lies in its ability to use its knowledge about every part of the different value chains in which it participates to manage its suppliers and train them to

make products according to IMPSA specifications. This strategy is more effective at reducing costs and decreasing the cost of capital needed, although it also poses potentially costly risks in terms of delays, quality failures, and so on. These risks are managed through contract provisions and inspections, as well as through the ability of IMPSA to produce most of its supplies if a supplier fails to meet the company's requirements or charges very high prices for its products.

According to sources within IMPSA, the firm does not have great difficulty finding qualified suppliers in Argentina or Brazil, although as mentioned above, it sometimes had to develop suppliers almost from scratch. One of the methods used to identify new suppliers is the organization of supplier development meetings, in which potential suppliers visit IMPSA plants and learn about the firm's requirements, while IMPSA collects information on their competences and capabilities.

Argentine and Brazilian SMEs make indirect exports to Asia through IMPSA. However, IMPSA has developed a high level of domestic integration in all its manufacturing locations and has also been developing local suppliers in Asia. Moreover, as in the other cases reviewed in this study, Latin American SMEs supplying IMPSA cannot directly compete in Asian markets given their competitive disadvantages in terms of costs and scales. This is generally also the case with other SMEs that sometimes ask IMPSA staff for advice on how to penetrate Asian markets (especially China). Only SMEs selling commodities have been able to prosper in that region. Finally, sources within IMPSA stated that in the medium and long run, Chinese suppliers could threaten the position of Argentine and Brazilian suppliers, given their cost and scale advantages.

4. Grupo Bagó

Grupo Bagó is an Argentine pharmaceutical firm founded in 1934 as Laboratorios Bagó. The company grew first in the domestic market, taking advantage of the fact that patents for pharmaceutical products were not allowed in Argentina (this changed after the country signed the TRIPs agreement in the mid-1990s). This allowed Bagó and other domestic firms with innovative capabilities to copy drugs patented elsewhere. In the 1960s, the company began to export to Latin America and became the major pharmaceutical firm in Argentina's market. In the 1970s, Bagó made its first foreign investment in Latin America. By that time, the firm's exports included not only health products, but also technology and turnkey plants (Campins, 2012). In the following decades, Bagó consolidated its position as one of the leading pharmaceutical firms in the Argentine market and deepened its internationalization strategy via both exports and FDI operations.

In 2012, Grupo Bagó employed 6,500 people worldwide, and at the end of the 2000s total sales amounted to US\$ 713 million (Campins, 2012). In Argentina, sales totalled US\$ 200 million in 2010, with a workforce of 1,400 people (Ministry of Economics and Public Finance, 2011).

Bagó has 11 manufacturing plants, 10 in Latin America (Argentina, Brazil, Chile, Colombia, Mexico, Paraguay and the Plurinational State of Bolivia) and 1 in Pakistan, which produces interferon for hepatitis C virus treatment. The firm has sales offices in 22 countries in Latin America, Europe and Asia (including Sri Lanka). Some of these investments are joint ventures with local partners, which manage the respective subsidiaries; this is the case of the manufacturing plant in Pakistan, for example. Bagó sells its products in 47 countries, including China, Japan, Kazakhstan, the Philippines, the Republic of Korea, Singapore, Taiwan Province of China, Thailand and Viet Nam, but Latin America is still the company's main market.

Grupo Bagó has signed more than 25 strategic commercial agreements and joint ventures with leading international pharmaceutical companies, such as Astellas, Pharma, AstraZeneca, Boehringer Ingelheim, Eli Lilly, Ferrer, Ferozsons, Fidia, MSD, Novartis, Pfizer and UCB. Bagó's R&D lab is located in Argentina, and it has obtained 85 patents in over 15 countries: 56 of those patents were obtained for the discovery of original molecules, 14 patents are related to manufacturing processes and 15 patents are related to innovative pharmaceutical forms.

Biogénesis Bagó is the animal health business unit of Grupo Bagó. Biogénesis was part of Chemotechnica Syntial, an Argentine group founded in the 1930s. In 1952, it registered the first vaccine for foot-and-mouth disease in Argentina. In 2006, it merged with Instituto San Jorge Bagó, creating Biogénesis Bagó. Currently, this company has a manufacturing plant and an R&D laboratory in Argentina and has become a regional leader in the foot-and-mouth disease vaccine market. The firm produces and sells around 70 different products for the animal health market. Biogénesis Bagó holds 90% of the market share for the foot-and-mouth disease vaccine in Argentina and 30% in South America. The product has also been sold in Taiwan Province of China during an outbreak there. Since 2006, Biogénesis Bagó has been a supplier of the North American Foot-and-Mouth Disease Vaccine Bank (NAFMDVB), part of the United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) programme.

The firm has commercial offices in Brazil, Mexico, the Plurinational State of Bolivia, Uruguay and some Central American countries. Its sales reached almost US\$ 100 million in 2010, and the number of employees in Argentina was 580 (Ministry of Economics and Public Finance, 2011).

Biogénesis is currently building a factory to produce the foot-and-mouth vaccine in Yangling, at the heart of the agricultural region of China. Biogénesis Bagó owns 40% of the stock of the new company, while HILE, a Chinese firm, holds the other 60%. According to sources at Biogénesis, it was the Chinese firm that offered Bagó the opportunity to work with them on the basis of the technological capabilities held by Bagó.

The Chinese plant will be twice as big as the Argentine one. The investment is projected to be US\$ 60 million, and it will employ 150 people. It is estimated that the total Chinese market for the foot-and-mouth disease vaccine is more than triple the Latin American market.²⁹

Bagó is designing and monitoring the project, in order to guarantee the required quality, efficiency and safety standards. Argentine technicians are travelling to China to train local personnel, and Chinese personnel will visit the Argentine plant to learn about the processes and technologies used. In each country, there are different prevailing lineages of foot-and-mouth disease and different regulatory controls. Therefore, 14 Chinese technicians are working in Argentina to jointly develop a specific serum that will be applied to produce the vaccine in China.

Currently, the group has around 5,000 suppliers in Argentina. They provide very different kinds of goods and services, including technologically complex ones such as reactors, laboratory and production equipment, measuring instruments and diverse chemical compounds. Only in the areas of molecules and active ingredients is domestic supply limited.

The recruitment of suppliers is predominantly based on a self-proposal process that prospective suppliers have to complete. These firms go through an evaluation process, which includes meeting stringent quality, safety and traceability standards.³⁰ Three exhaustive audits are performed to verify that SMEs comply with these requirements. Because both Bagó and Biogénesis are subject to constant audits by their customers, the requisites imposed on them are transmitted to their respective suppliers. Specifically, firms in the value chain must comply with the so called good manufacturing practices (GMP) that are required for getting authorization to produce and distribute pharmaceutical products.

To enter distant markets such as the Russian Federation and several Asian nations, Bagó had to adapt its packaging and prospectus, as well as other inputs. The required changes included not only translating the information into different languages, but also complying with the specific

²⁹ See [online] www.telam.com.ar/notas/201310/35600-biogenesis-bago-instalara-una-planta-de-produccion-de-vacunas-antiaftosa-en-china.html.

³⁰ Cristi Barría (2003) describes the procedures used in the selection and evaluation of Bago's suppliers in Chile.

requirements of domestic legislation. Hence, Bagó's local suppliers had to adapt their processes and products to these new requirements.

Both Bagó and Biogénesis manage supplier development programmes, through which they provide SMEs mainly with technical and organizational assistance. Relations with suppliers are long lasting; some firms have been supplying Bagó for more than 40 years. The turnover ratio is low, and exit is mainly due to a failure to achieve the required safety and quality standards. The group also has an inclusive purchase programme aimed at involving local communities, which mainly supply basic services.

At the manufacturing plant in Pakistan, the involvement of local suppliers is limited to those few that can supply large volumes of inputs. In the case of the new Chinese plant, sources within the group indicated that the bulk of the suppliers will be Chinese.

The owners of Grupo Bagó have been active in implementing initiatives to promote and support small business in Argentina. In particular, Fundación Empresa Global de Investigación y Capacitación en Competitividad (FEG) is a non-profit institution created by Sebastian Bagó with the aim of doing research on and fostering the competitiveness of Argentine SMEs. One of the projects of this institution is the Dynamic Entrepreneurship Programme, co-financed with the Inter-American Development Bank (IDB), which aims to promote the emergence and growth of SMEs in high value added businesses. The SMEs Competitiveness Support Programme is oriented towards improving and expanding SMEs productive and export capacity. This programme grants assistance in areas such as management, design, productive processes and access to foreign markets. The programme also provides support by facilitating access to preferential credits offered by the SMEs Secretariat of the Argentine government. Finally, it provides help in the form of information, orientation and consultancy services for SMEs that are developing projects aimed at accessing seed capital and government grants.

C. Conclusions and policy lessons

Although the internationalization of Argentine trans-Latins has lost steam in the last decade, the four largest firms (namely, Arcor, Techint, IMPSA and Grupo Bagó) have consolidated their presence in the Asian region. All four have implemented supplier development policies for many years (in some cases, these initiatives involve the cooperation of other private and public organizations) and have standards and procedures for evaluating the performance of their suppliers not only in terms of cost, efficiency and quality, but also in the environmental and social areas. Some of them have

even launched programmes aimed at incorporating suppliers belonging to poor or vulnerable groups (so-called inclusive-purchase programmes). Moreover, the bulk of trans-Latins' suppliers are SMEs.

Evidence shows that these firms are able to find competent suppliers of inputs, raw materials and services in Argentina (and in Latin America more generally), although in some cases they had to "create" suppliers, especially when host governments imposed minimum local integration standards in exchange for having access to the local market and/or to preferential loans. The firms would then establish long-term relations with these suppliers, keeping turnover ratios generally low. The presence of foreign suppliers is higher in the area of capital goods since local provision is not always available, especially when complex technical equipment is required.

As they deepen their internationalization processes, the trans-Latins have had to adapt to the different legal and business requirements of each market where they compete. Meeting these requirements often requires technological and productive changes, which have to be implemented by their suppliers. Trans-Latins often help their suppliers undertake these adaptations, as has been the case of operations in Asian markets.

However, when Argentine trans-Latins have plants in Asia, the bulk of inputs and services are supplied by local firms in the host countries. All sources interviewed for this research agreed that Argentine suppliers are not competitive with their Asian counterparts, and that it is almost impossible for Latin American SMEs to engage in independent business operations in that region (except when they sell commodities and, even in that case, they need local partners in the countries in which they want to sell).

Some firms stated that they are actively looking for suppliers in Asia, which could threaten the position of their domestic suppliers in Argentina. The latter still have the advantages of geography and long-term relations with their trans-Latin clients. Eventually, however, these advantages could be eroded as trans-Latins identify capable Asian suppliers and begin to establish business relations with them.

The policy implication for dealing with this scenario is related to the more general agenda for developing SMEs in Latin America. This includes the need to foster the microeconomic competitiveness of these firms and to improve the mesoeconomic and macroeconomic environment in which they operate. Specific initiatives could also be undertaken with individual trans-Latins to expand their supplier development programmes with an eye to exporting to Asian markets, although prospects are not promising in this area.

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Annex V.A1

List of people interviewed for the research

- Alfredo Bascou, Investment Area, Embassy of Argentina in China, Beijing.
- Ernesto Fernández Taboada. Executive Director, Argentine-Chinese Chamber of Production, Industry and Commerce.
- Daniel Blanco, Manager of External Affairs, Tenaris.
- Ricardo Boveris, Logistics and Supply Chain, Exiros.
- Ezequiel Tavernelli, ProPymes Manager, Techint.
- María de los Ángeles de San Segundo, Institutional Relations Manager, Biogénesis Bagó.
- Sebastián Ferrarassi, General Director for Asia, Europe and Africa, Grupo Bagó.
- Martín Hayet, Purchase Manager, Grupo Bagó.
- Alejandro Verni, Business Manager for Asia and Oceania, Arcor.
- Sebastian de Gaetano, Chief of Projects and Processes, Purchasing Department, Arcor.
- Diego Endraos, Purchase Manager, Purchasing Department, Arcor.
- Ismael Jadur, Institutional Relations Manager, IMPSA.

Chapter VI

The role of small and medium-sized enterprises in Korean high-tech export clusters: the case of electronics and pharmaceuticals

*Si un Yi*¹

Summary

This chapter looks into the participation of the Republic of Korea's small and medium-sized enterprises (SMEs) in two high-tech export clusters led by Korean multinational corporations (MNCs). The first cluster is electronics, which accounted for one fifth of Korean exports to Latin America in 2013. The second is pharmaceuticals, which has a small but growing share in exports. Two case studies, based on company reports and interviews, illustrate some of the advantages and disadvantages for SMEs supplying MNCs in these clusters. SMEs have a larger role in the more developed electronics industry than in the pharmaceutical industry. This may be explained, in part, by government support in the first industry, which has enhanced business opportunities for SMEs.

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Introduction

The participation of small and medium-sized enterprises (SMEs) in global value chains (GVCs) depends not only on the lead firms (typically multinational corporations (MNCs)), but also on factors such as the productivity of the SMEs, government macroeconomic and microeconomic policies, country characteristics and industry dynamics. Most SMEs are too small to export directly or to establish subsidiaries abroad. Instead they often supply goods or services to large firms that export to overseas markets.

The governance structure within a value chain provides valuable insights on the challenges SMEs face when linking up with large firms. In particular, it shows the main motivations and drivers of MNCs to include SMEs in their supply base. A value chain analysis enables the mapping of all actors within the entire chain, from SMEs all the way up to the lead firm. This type of analysis may help governments to evaluate where assistance is required to further develop linkages between SMEs and MNCs.

To illustrate these dynamics, this chapter examines the participation of Korean SMEs in two export clusters led by two Korean MNCs that export a significant share of their production to Latin America: electronics and pharmaceuticals. In 2013, Korean exports to Latin America reached US\$ 36 billion. Electronic equipment and parts is the predominant export sector for this market, with one fifth of total exports. Pharmaceutical exports have increased gradually since 2011, accounting for only 0.7% of total exports to Latin America in 2013.

For this study, various interviews were conducted with small and large companies in order to explore the challenges in creating cooperative relationships between MNCs and SMEs. The interviews illustrate that the development of business linkages depends not only on economic motives, but also on other factors such as cultural incentives.

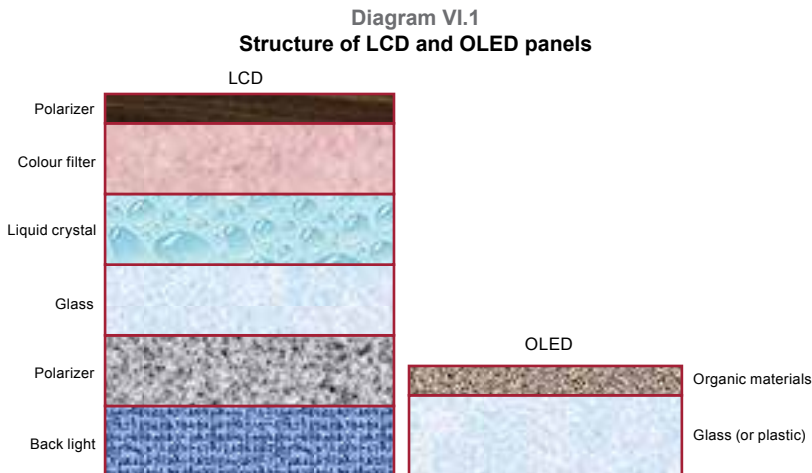
The chapter has two main sections, each focusing on a specific industry. The first is on electronic displays. After describing the industry, the section presents a case study of Samsung and analyses how this MNC works with SME suppliers. The second explores the pharmaceutical industry, with a case study of a medium-sized company, Boryung Pharmaceutical Company, and its SME suppliers.

A. The display panel value chain

1. General description

The display panel industry is both knowledge and capital intensive. It operates in a vertical manner that starts with the production of electronic components and ends with the assembly of the finished products. Display panels are a crucial input in the production of other high-tech products such as laptop computers, smart phones and televisions. Since the production of the Braun tube televisions in the 1960s, the industry has innovated rapidly towards liquid crystal display (LCD) panels, organic light-emitting diode (OLED) panels, flexible panels and transparent panels.

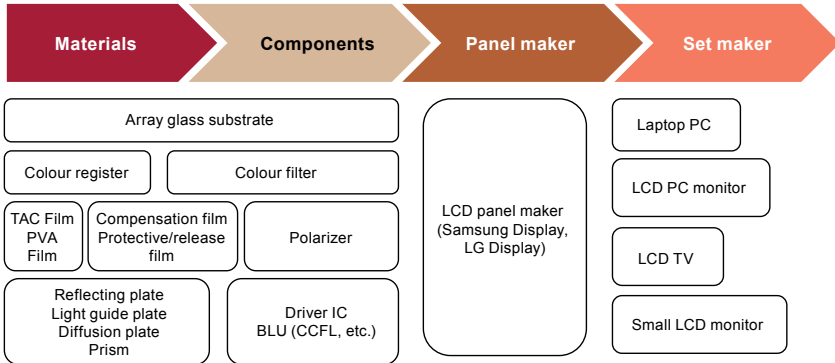
OLED displays require fewer components than LCD displays. The latter are built from various electronic components and require a back-light unit (BLU) to project the image. In contrast, the former no longer requires a BLU (see diagram VI.1). Instead, an OLED display is made up of organic materials that emit light on their own, allowing the display to be produced on a film-sized layer in various forms and sizes. The OLED technology was developed in the 1990s, but it was not mass-produced or marketed by Samsung SDI until 2007. LCD and OLED production processes differ greatly in terms of parts and materials, but their value chain process and SME participation is similar.



Source: Woori Investment and Securities, "OLED Industry", Seoul, 2011.

The value chain for the production of display panels has both upstream and downstream segments. The downstream segment involves final set makers producing items such as laptops and personal computers (PCs). The upstream segment can be divided into two parts: fabrication assembly and module assembly (see diagram VI.2). The fabrication assembly of LCD displays requires a thin film transistor (TFT), a colour filter (CF) and a cell process. This assembly requires relatively high technology and uses inputs such as array glass substrate, colour filters, polarizers, liquid crystals and sheets. The module assembly combines the panel with a driving head and back light, which requires a lower level of technology and more manufacturing equipment. In the LCD value chain, it is crucial to build strategic business relations between LCD panel makers, final set makers and module original design manufacturers (ODMs). To ensure the compatibility of technologies, business relations are more intense than in many other industries.

Diagram VI.2
Value chain of the LCD panel industry

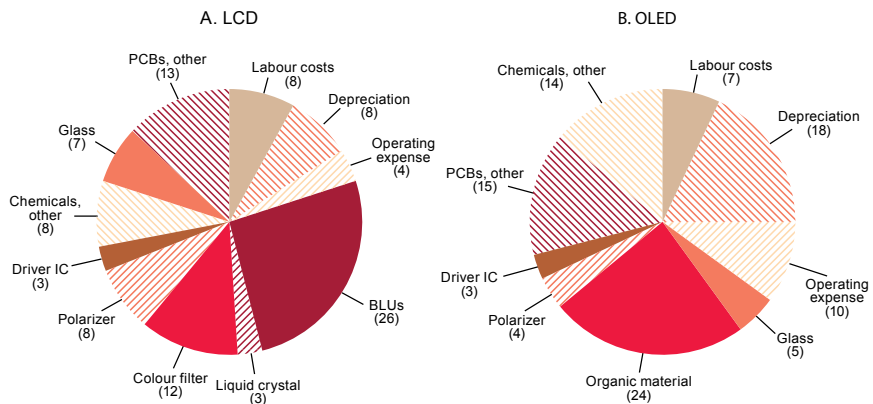


Source: Display Search, *Semiannual TFT-LCD Materials and Components Report*, Seoul, 2011.

The production process of OLED panels requires more advanced technologies than LCD panels. Both are built up of three processes: the TFT manufacture process, the evaporation process (which uses a vacuum thermal evaporator to stack organic material into the TFT) and finally the encapsulation process (which applies a protective glass film to encase the organic material). Except for the BLU, the OLED and LCD panels share many components, such as the driver integrated circuit (IC), timing controller (T-Con), polarizing film and printed circuit boards (PCBs) (Korea Eximbank, 2013). While the LCD panel industry is predominantly based on parts, the production of OLED panels is intensive in materials. The high fixed cost of OLED production makes it difficult for small producers to enter this industry.

The production of LCD and OLED panels had different cost structures in 2013 (see figure VI.1). Components required for LCD displays accounted for two thirds of total production cost, compared with 47% in the case of OLED panels. However, depreciation accounted for a lower share in the former (8%) than the latter (18%). When OLED panels are sold in larger quantities, the share of depreciation in the total cost should fall. In 2013, Korean companies had an 85% market share of the global production of the OLED parts and materials (KICET, 2012).

Figure VI.1
Cost structure of LCD and OLED production, 2013
(Percentages)



Source: E-trade Securities, "Issue Comment: Display Industry", Seoul, 2013.

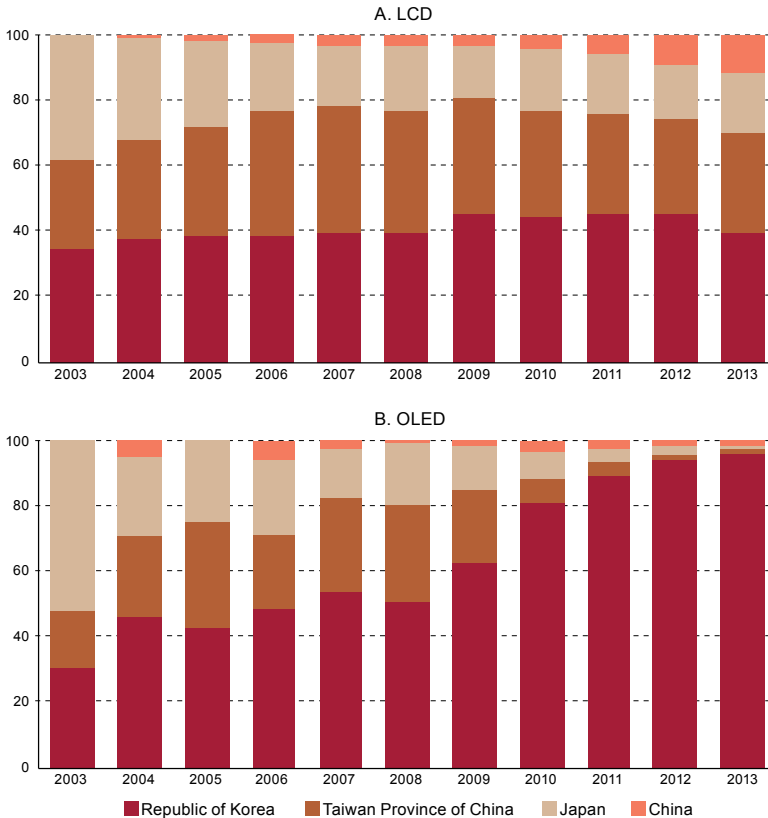
2. The Republic of Korea's panel industry

The Republic of Korea is the world's largest producer of display panels, followed by China (BOE-OT, SVA-NEC, IVO, Century, Tianma), Japan (Sharp, IPS Alpha, TMD, NEC, Hitachi, Fujitsu, Epson, Sony) and Taiwan Province of China (AUO, CMO, CPT, Hannstar Innolux, Prime View). The display panel upstream industry was initiated by Japan until the Republic of Korea entered the market in the early 1990s. In the early 2000s, LG and Samsung made large investments in this industry, in combination with government support. As a result, almost 40 new companies related to the display panel industry have been created in the Republic of Korea every year since 1999. The number of companies increased from almost 280 in 2004 to 400 in 2014 (Invest Korea, 2013).

The dynamic display panel industry has become a strategic sector in the Korean economy. In 2013, it accounted for 3.4% of GDP, recorded US\$ 34 billion in exports and employed 127,000 people. In the same year, Korean companies had a 45% share in the world display panel market.

The Republic of Korea has two multinational companies that dominate the industry: LG Display and Samsung Display. TFT-LCD panels still accounted for a majority share in the global display panel market in 2013. However, several new types of panels produced in China and Taiwan Province of China were gaining shares in the global market of displays. With the invention of the new OLED display, Samsung and LG stepped up their research to maintain their technical superiority and market share. As a result, the Republic of Korea accounted for 95% of the production of OLED display panels in 2013 (see figure VI.2).

Figure VI.2
World display panel market: production shares by country, 2003-2013
(Percentages)



Source: Korea Display Industry Association [online] www.kdia.org.

Korean production of LCD displays fluctuated slightly from 2008 to 2013, whereas production of OLED displays increased steadily (see table VI.1). Almost three quarters of Korean exports of display panel parts and components were sold to China in 2013, because both firms have

manufacturing plants in China. Latin America was the second largest market (figure VI.3).

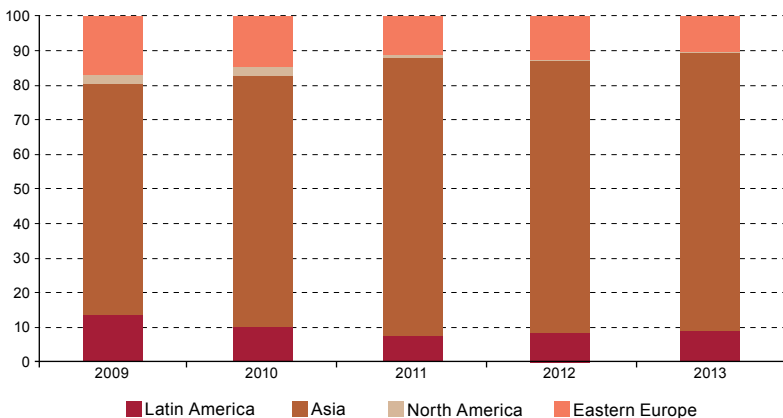
Table VI.1
Republic of Korea: display panel industry, production and exports, 2008-2013
(Millions of dollars)

	2008	2009	2010	2011	2012	2013
Production						
LCD	35 344	31 003	34 940	31 671	34 372	31 311
OLED	270	589	869	2 277	4 676	6 724
Exports						
LCD	33 702	29 099	31 809	29 485	29 348	26 733
OLED	252	436	661	1 781	4 049	5 781

Source: Korea Display Industry Association [online] www.kdia.org.

In the Republic of Korea, five clusters have been created around the Samsung and LG production plants. The two largest are Paju and Tangeong (see table VI.2). Samsung Display has developed the town of Tangeong (which it calls Display City) as its largest production base. Within this town, Samsung built its first LCD production line and the Samsung Corning Precision Materials plant. The latter was developed to meet increased TFT-LCD demand. A manufacturing line for OLED production has been constructed in the same town. In parallel, LG Display has invested in the Paju cluster with LCD and OLED production lines. Other LG affiliates have set up shop nearby. These two clusters have attracted hundreds of material and parts suppliers.

Figure VI.3
Republic of Korea: display panel exports by destination market, 2009-2013
(Percentages)



Source: Korea Display Industry Association [online] www.kdia.org.

Table VI.2
Republic of Korea: comparison of the two main display panel clusters

	Tangjeong Samsung Display	Paju LG Display
Distance to major facilities or places		
Incheon International Airport	164 km	50 km
Ports	30 km (Pyeongtaek, Dangjin)	50 km (Incheon)
Seoul	85 km	35 km
Seoul Station	34 minutes (KTX), 90 minutes (automobiles)	60 minutes (automobiles, railroads)
Water supply	Daecheong Dam	Paldang Dam
Cities in the vicinity	Cheonan, Asan	Ilsan
Institutions for higher education	Cheonan, Asan	—

Source: Invest Korea [online] www.investkorea.org.

Note: The Korea Train eXpress (KTX) is the country's high-speed rail system.

3. Case study: Samsung Display

Samsung Display is a Korean electronics company that produces display panels. It was created in 2012 as a spin off from Samsung Electronics and started out as a mobile display division. In 2013, it had 31,000 employees in the Republic of Korea and US\$ 29 billion in sales. It has two operating divisions: LCD and OLED. Since the company is part of the Samsung group, two thirds of its sales go to other Samsung subsidiaries producing electronic devices.

It is difficult to estimate the total value of Samsung Display exports to Latin America as the company has several assembly plants around the world. However, Latin America's consumption of Samsung products that incorporate Samsung display panels provides an indirect measure of its strategic importance. In 2013, the market shares of Samsung Electronics in Latin America were 55% for smart phones, 40% for tablet PCs, 35% for televisions and 18% for laptop computers.

Samsung Display has started to shift its display panel technology from LCD to OLED. In 2010, Samsung Electronics first adopted OLED panels for its Galaxy S2 mobile telephones. By 2013, one fifth of its electronic devices had OLED displays. However, Samsung Display has not yet been able to reduce the manufacturing cost of these new panels. Another challenge is the short lifespan of several parts (less than six years), which makes OLED panels suitable only for devices with a short lifespan, such as mobile telephones.

Samsung Display operates three manufacturing plants in China, three in the Republic of Korea and one in Slovakia. The company has announced that it will build a new OLED display module plant in Viet Nam by 2020, which will serve the production of Samsung Electronic

telephones in the same country. Samsung Display is accelerating its sales in neighbouring markets, as well creating an industrial cluster around Samsung Electronics.

The supply of materials for the production of OLED panels is concentrated in a few companies (see table VI.3). Before Samsung SDI started mass-producing electron transport layers (ETLs), LG Chemicals was the only supplier in the market. In 2014, Samsung Display sourced more than 85% of its hole transport layers (HTLs) from DS Hi-Metal. With few suppliers, the bargaining power of Samsung Display is weak. This is not yet a major issue, however, since the production of OLED panels is still relatively small compared with LCD displays.

Table VI.3
Samsung Display: suppliers of materials for OLED production

Organic materials	Supplier companies
Electron injection layers (EIL)	LG Chemicals
RGB-emitting layers (EML)	Dow Chemical (United States), CS Elsolar, DS Hi-Metal, Samsung SDI, SFC
Electron transport layers (ETL)	LG Chemicals, Samsung SDI
Hole injection layers (HIL)	DS Hi-Metal
Hole transport layers HTL)	CS Elsolar, DS Hi-Metal, Samsung SDI

Source: Shinhan Investment Corp, "Diagram of Samsung Electronics and affiliated companies", Seoul, 2013.

The electronic components that are used in the production of both LCDs and OLEDs were also supplied by few companies (see table VI.4). One example is the T-Con semiconductor, which is essential for the image production process. T-Con suppliers, such as Anapass, therefore have a strategic role in the value chains of LCDs and OLEDs.

Table VI.4
Samsung Display: suppliers of electronic parts for OLED production

Process	Largest suppliers
Driver integrated circuit	Samsung Electronics
Module Assembly	Nepes, LB Semicon
Polarizer film	Ace Digitech (subsidiary of Samsung Electronics)
T-Con semiconductor	Anapass, Silicon Works, TLI

Source: Woori Investment and Securities, "OLED Industry", Seoul, 2011.

Samsung Display's national supplier base also includes SMEs that produce back-light units (BLUs).² BLUs are the light source for TFT-LCDs and account for up to 25% of the LCD panel production cost, according

² Other parts, such as array glass substrate and liquid crystal, are imported from, for example, Germany, Japan and the United States.

to the Korea Display Industry Association. The BLUs are purchased from about 20 SMEs (see table VI.5).³ The production of BLUs is a relatively simple process with low value added content. In contrast to firms producing other electronic parts, BLU producers have clustered around Samsung Display factories.

Table VI.5
Samsung Display: SME^a suppliers of back-light units, 2014

Supplier	Capital (millions of dollars) ^b	Number of employees ^b	Sales (millions of dollars) ^c	Major products	Notes
E-Litecom	5.5	187	102.5	BLUs for mobile phones, medium-sized liquid crystal modules (LCM)	Delivers to Samsung, LG and Apple
Samjin LND	8.6	175	50	BLUs for TVs, LED lamps, mould frame	
Display Tech	8.4	224	65.1	LCD modules for mobile phones	
Kumho Electric	31.4	246	113.8	Fluorescent lamps, LED lamps, LED parts (CCFLs, BLUs)	
Inzi Display Company Limited	15.4	276	77.2	Top chassis for panel modules, BTM chassis for BLUs	Contractor of Samsung Display. Deliver product for SESL (Samsung Electronics Suzhou LCD), SAMAX (Samsung Mexicana)
Reygen	7.5	201	29.5	BLUs for TVs and monitors, light guide panels (LGPs)	Domestic partners are LG and Samsung; also exports to Japan and Taiwan Province of China.
Fine DNC	8.0	298	51.8	Top chassis, bottom chassis for LCD/LED TVs	
Korea Computer INC.	7.2	273	82.9	Modules for LCD TVs and mobile phones, LED surface-mount technology (SMT) for laptops	LED-SMT for laptop is exported to China first and then indirectly delivered to Samsung Display.
A-Tech Solution	4.5	480	54.9	Mould frames, LED lamps, LGPs for TVs	

Source: Prepared by the author on the basis of company information based on Kisvalue [online] <http://www.kisvalue.com>.

^a As of 2014, the Republic of Korea defines small and medium-sized enterprises (SMEs) as companies that have fewer than 300 employees or capital equivalent to less than US\$ 7.2 million.

^b Data on capital and number of employees are as of June 2014.

^c Sales figures are for 2013.

³ According to Korean law in 2014, small manufacturing companies have fewer than 50 employees, while medium-sized ones have 50 to 300 employees.

The outsourcing of some module assembly parts, such as BLUs, has several advantages for Samsung Display. First, it helps to cut production costs by reducing additional investment and labour costs. Second, outsourcing to different suppliers allows for a more flexible management of its supply chain and reduces the risks arising from volatile cycles of supply and demand for final products such as tablets and televisions. This volatility is one of the largest threats for the panel makers. Third, because technology changes rapidly, such as the replacement of LCD by OLED, the types of parts and components required change over time. Therefore, panel makers have a strong incentive to manage the upstream industry in a flexible way.

While this vertical relationship offers SMEs a steady demand for their BLU products, it also presents several challenges. First, SMEs have little capital to invest in new technology or research and development (R&D), and the patents that are used to produce BLUs increase costs for SMEs. Second, exporting is often difficult for SMEs, due to both the cost and the associated bureaucratic hurdles. Third, SMEs struggle to build a stable and well-trained work force: because they are only able to offer limited job security and low wages, they fail to motivate and retain their employees.

Given that there are few purchasers of BLUs and a large number of suppliers, the market is very competitive. Buyers have the power to dictate prices and set product specifications. Dependency on one or a few buyers can limit sales growth. The only way to increase profit margins is through cost reductions. SMEs can only bargain prices if there is a sudden increase in demand for display panels. One way to offset the risk of demand domination is through the diversification of the client base to more MNCs, such as E-Litecom which supplies to Samsung, LG and Apple (see table VI.5).

Samsung Display is concerned that its SME suppliers may leak knowledge. The company tries to avoid this by incorporating a non-disclosure agreement in their contracts. As a single SME can have contracts with more than one multinational company, knowledge protection is vital to establish trust and ensure competitiveness. Moreover, contracts have a short duration (around one year), so they can be discontinued if there are supply problems or knowledge leakages.

To secure a stable, high-quality supply of components, Samsung Display has contributed to upgrading its SME suppliers through a special program aimed at reducing their dependence on imported components while improving their price competitiveness. Thus, the company has financially and technically supported its suppliers, in part through an open innovation strategy called the Creative Partnership Program (CrePas) introduced in 2009. This program supports the R&D of SMEs and guarantees the purchase of their product once they meet required quality

standards. When selected for the program, the SME receives an R&D grant of US\$ 1 million to hire specialized workers, train their own employees and buy specialized equipment.

The CrePas program is not restricted to SMEs that are already suppliers of Samsung Display, but is open to all interested parties. From 2009 to 2013, 42 SMEs have participated in this program, through which they received US\$ 15 million of financial support. As a result, Samsung Display has managed to outsource to local SMEs 200 items with a sales value of US\$ 226 million (Digital Daily, 2012). In 2013, almost 300 SMEs had applied for this program. For SMEs in this industry, this program has become vital for opening up new business opportunities.

One SME that benefited from the CrePas program is E-Litecom, which supplies BLUs and other parts to Samsung Display. This company received US\$ 450,000 to train its personnel and install an automatic test machine, which replaced a manual-check module assembly for smart phones. According to this company, it is very difficult for SMEs to develop and apply a new technology without additional financial support.

Another example (based on an interview for this study) is a company that sells BLUs for LCD panels and equipment for OLED panels to Samsung Display, Samsung Electronics and LG Display. It has fewer than 50 employees. According to the company, selling to multinationals has several advantages: securing a stable demand, ensuring timely payments and improving its image and credibility. Selling to Samsung Display helped it to attract new buyers. Its main challenge is that it has more than 200 competitors in the same LCD panel cluster in the Chungcheong area. With few buyers, each SME has little bargaining power. Its contracts with multinationals are renewed every year, and frequently the MNCs impose lower prices. Moreover, to secure immediate delivery and high quality, the MNC clients require daily production reports, which imply extra work and cost.

4. Government support

The Korean government has supported SMEs in the display panel industry in different ways. First, the Ministry of Trade, Industry and Energy (MOTIE) supports R&D capacity building for SME component manufacturers through various initiatives. One example is the Material and Component Technology Plan introduced in 2012, which aims to reduce dependence on imported parts and materials from 2013 to 2016 (MOTIE, 2013). The plan subsidizes R&D costs incurred by SME suppliers and contributes to the creation of industrial clusters. Another goal is the domestic production of polyvinyl alcohol film, which is used to produce

polarizer and polyimide for liquid crystal. As this latter project is new, its success remains unclear.

Second, the government created the Display Shared Growth and Cooperation Committee in 2014, which includes representatives of the government, multinational companies and SMEs. The goal is to promote the participation of SMEs in the display panel industry (MOTIE, 2014a). For the next five years, the Committee will support the participation of SMEs in the development of flexible and foldable displays, as well as printed electronics. The cooperation has been motivated in part by China's export boom of cheap panel displays, which is threatening the Republic of Korea's dominant position in the world market. It follows the Semiconductor Research Corporation model: universities and research institutes conduct research and apply for patents, and SMEs will then be able to use these patented technologies. Government support amounts to US\$ 27 million over the next five years. LG Display also participated in the government plan by releasing 257 idle patents to domestic SMEs in 2014.

Third, the government aims to support the overall competitiveness of SMEs by establishing, for instance, the Technical Support Centre for Touch Panel Industry in Daegu (MOTIE, 2014b). This centre helps SMEs to better plan their manufacturing processes, including product design, certification, pilot production and marketing. Other initiatives of the centre include helping SMEs improve their product reliability assessment methods, their cooperation with multinationals and their networking with government organizations.

B. Pharmaceuticals value chains

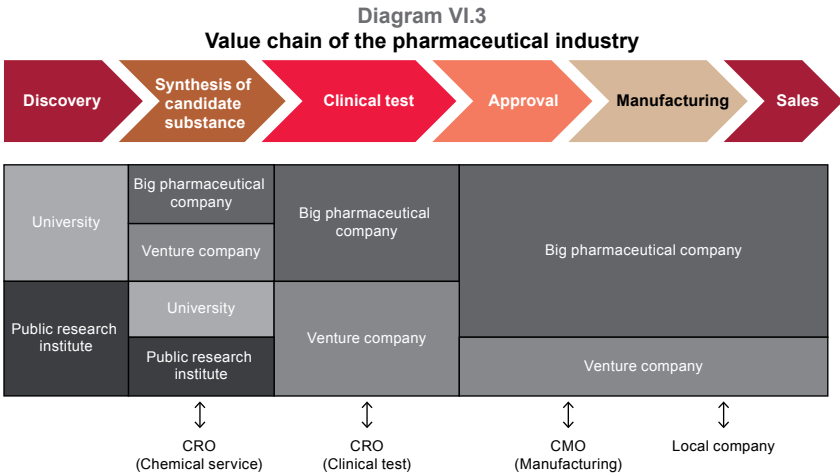
1. General description

The pharmaceutical industry is very technology intensive, with high value added each time a new drug is patented. The process from discovery to approval represents almost 70% of the total cost of a drug. The drug manufacturing process can be divided into two steps: the supply of the ingredients and the manufacturing of the product. Due to the high initial capital investment and technology intensity, developed countries focus mostly on the development of new drugs and production of synthetic raw materials within the value chain. Developing countries, for their part, focus mostly on importing large volumes of drugs, which are in turn repackaged for final consumption in the local market. Since pharmaceuticals directly affect people's health, governments regulate this industry more than others, controlling the drug approval process, production, distribution and

sales. The demand elasticity for drugs is relatively low, and the industry is less subject to economic cycles.

The pharmaceutical industry value chain can be divided into three segments: research and development (R&D), manufacturing and sales (see diagram VI.3). The R&D segment includes discovery, synthesis of candidate substances and clinical tests (phases I, II, III). Once a new substance passes the clinical trials, its safety and effectiveness need to be approved by a regulatory agency. This process takes 14 years, on average, and may cost US\$ 800 million. The success rate of new drugs is very low. Almost 70% of the total cost goes to personnel expenses for clinical tests (KHIDI, 2012). After the clinical trials, a large investment is required to start the production and commercialization of the new drug.

Universities and public research institutes constitute the central players in the first segment of the value chain, focusing on discovering new drugs and producing new drug substances. Large pharmaceutical and venture companies also play a part in the first segment. Later on, these companies govern the next two segments of the value chain (production and commercialization), which are highly capital intensive.



Source: Science and Technology Policy Institute (STEP), 2014 [online] www.stepi.re.kr.

2. The Korean pharmaceutical industry

Korean participation in the global pharmaceutical market place is small but growing. It is the world’s fifteenth largest producer, behind Mexico and Brazil. Its industry output equals US\$ 11 billion or 2% of Korean GDP in 2012 (KHIDI, 2013b). The country has almost 270 companies producing

final pharmaceutical products and about 300 producing drug substances (see table VI.6). The top 10% of pharmaceutical companies account for half of all industry sales.

Table VI.6
Republic of Korea: production size ranges of pharmaceutical firms, 2010-2011

Sales	2010			2011		
	Number of firms	Production (billions of dollars)	Market share (percentages)	Number of firms	Production (billions of dollars)	Market share (percentages)
More than US\$ 441 million	5	2.8	21.7	3	1.7	14.0
US\$ 265 million to US\$ 441 million	6	2.1	16.7	8	2.7	21.7
US\$ 89 million to US\$ 265 million	27	4.0	31.4	29	4.3	34.0
US\$ 44 million to US\$ 89 million	29	1.9	15.0	31	1.9	15.1
US\$ 9 million to US\$ 44 million	69	1.6	12.8	71	1.6	13.0
Less than US\$ 9 million	134	0.3	2.5	125	0.2	2.1
Total	270	12.9	100.0	267	12.8	100.0

Source: Ministry of Food and Drug Safety [online] www.kfda.go.kr.

The Republic of Korea's current pharmaceutical technology capabilities are half way between those of their peers in developing and developed economies. Most companies in the country focus on the production of generic drugs by synthesizing drug substances, rather than developing new drugs. This is due to the high business risks and limited R&D capacities relative to their peers in developed countries. However, a few companies have accumulated sufficient knowledge, human skills and investment to invest heavily in the discovery of new candidate substances. The Republic of Korea is still not very competitive in conducting clinical trials, as it has few experts, clinical test centres and facilities, so it continues to depend heavily on foreign contract research organizations.

One third of total employment in pharmaceutical firms is concentrated in sales and marketing (see table VI.7). One tenth of the total pharmaceutical workforce is made up of R&D employees. From 2008 to 2010, the largest 10 companies re-invested 7.8% of their revenue in R&D, on average, whereas smaller companies invested proportionally less (4.2%). These ratios are slightly below the world average (KHIDI, 2013b).

Table VI.7

Republic of Korea: employment composition of pharmaceutical producers, 2008-2010

Classification	2008		2009		2010	
	Number of employees	Percentages	Number of employees	Percentages	Number of employees	Percentages
R&D	7 801	10.3	8 640	10.6	8 699	11.3
Production	23 212	30.8	24 354	30.0	24 050	31.1
Sales and marketing	26 721	35.4	27 520	33.9	26 626	34.4
Administrative	14 009	18.6	15 924	19.6	14 792	19.1
Other	3 663	4.9	4 766	5.9	3 147	4.1
Total	75 406	100	81 204	100	77 314	100

Source: Ministry of Food and Drug Safety [online] www.kfda.go.kr.

Over the past three decades, the Korean pharmaceutical industry has gradually expanded in terms of size, technology and human resources. It also succeeded in developing 32 new drugs (see table VI.8). In the 1990s, only four drugs were approved. However, the number of newly approved drugs has steadily increased since the 2000s.

Table VI.8

Korean pharmaceutical companies: newly approved drugs, 1988-2013

Year	Company	Product	Approval organization
1988	Myungmoon Pharm	Artroda capsules	KFDA ^a
1990	Pharmaking	Nissel tablets	KFDA
1992	Myungmoon Pharm	C&U capsules	KFDA
1999	SK Chemicals	Sunpla injection	KFDA
	Myungmoon Pharm	Silcon tablets	KFDA
2001	JW Pharmaceuticals	Quroxin	KFDA
	SK Chemicals	Joins tablets	KFDA
	Daewoong Pharma	EGF Nepidermin	KFDA
	Dong Wha Pharm	Milican	KFDA
2002	Dong-A Pharmaceutical	Stillen tablets	KFDA
	TEGO Science	Holoderin	KFDA
2003	LG Life Science	Factive	FDA ^b
	Chong Kun Dang Pharm	Camtobell	KFDA
2005	Dong-A Pharmaceutical	Zydena tablets	KFDA
	Yuhan Corp.	Revanex	KFDA
2006	Bukwang Pharm	Levovir tablets	KFDA
2007	LG Life Science	Valtropin	FDA
	SK Chemicals	Mvix tablets	KFDA
	Daewon Pharm	Pelubi tablets	KFDA
2008	CJ	Smallpox Vaccine	KFDA
	Ahn-gook Pharm	Anycough capsules	KFDA
	Il-Yang Pharm	Noltec tablets	KFDA

Table VI.8 (concluded)

Year	Company	Product	Approval organization
2010	Boryung Pharmaceutical	Kanarb tablets	KFDA
	TEGO Science	Kaloderm	KFDA
2011	JW tablets	Zepeed tablets	KFDA
	Green Cross Corp.	Shinbaro capsules	KFDA
	Shin Poong Pharm	PYRAMAX	KFDA
	Ahn-gook Pharm	Synatura syrup	KFDA
	Dong-A Pharmaceutical	Motilitone tablets	KFDA
2012	Ilyang Pharm	Supect capsules	KFDA
2013	Chong Kun Dang Pharm	Duvie	KFDA
	Hanmi Pharm	Esomezole tablets	FDA

Source: Ministry of Food and Drug Safety [online] www.mfds.go.kr.

^a KFDA: Korea Food and Drug Administration.

^b FDA: United States Food and Drug Administration.

From 2008 to 2012, the Republic of Korea's trade in pharmaceutical products also rose steadily. In 2012, exports of pharmaceutical products amounted to US\$ 2.0 billion, compared with only US\$ 1.1 billion in 2008. During the same period, imports of pharmaceuticals largely outweighed exports, accounting for US\$ 5 billion in 2012 (see table VI.9). The Republic of Korea's main export markets were Japan (18%), Viet Nam (8%), China (7%) and Brazil (4%). The main country origins of its imports were Japan (12%), the United States (12%), Germany (11%) and Switzerland (10%).

Table VI.9
Republic of Korea: pharmaceutical exports and imports, 2008-2012
(Millions of dollars)

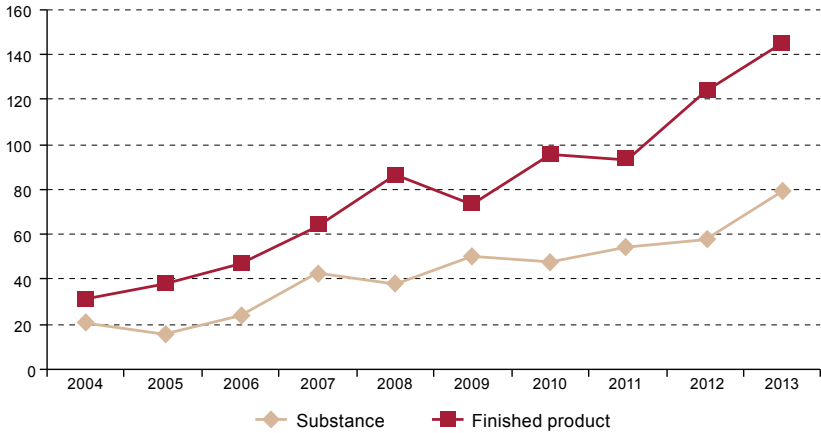
Division	2008	2009	2010	2011	2012
Exports					
Drug products	587	777	791	847	994
Drug substances	551	614	739	906	1 055
Total	1 139	1 391	1 530	1 753	2 049
Imports					
Drug products	2 013	2 127	2 520	2 934	3 008
Drug substances	1 904	1 754	1 898	1 981	2 075
Total	3 917	3 881	4 418	4 915	5 083

Source: Korea Pharmaceutical Traders Association, *Facts & Survey Report*, 2008-2012.

Korean pharmaceutical exports to Latin America have quadrupled over the past 10 years, from US\$ 50 million in 2004 to US\$ 220 million in 2013 (see figure VI.4). In that year, Latin America accounted for about one tenth of total Korean pharmaceutical exports. By destination, Brazil

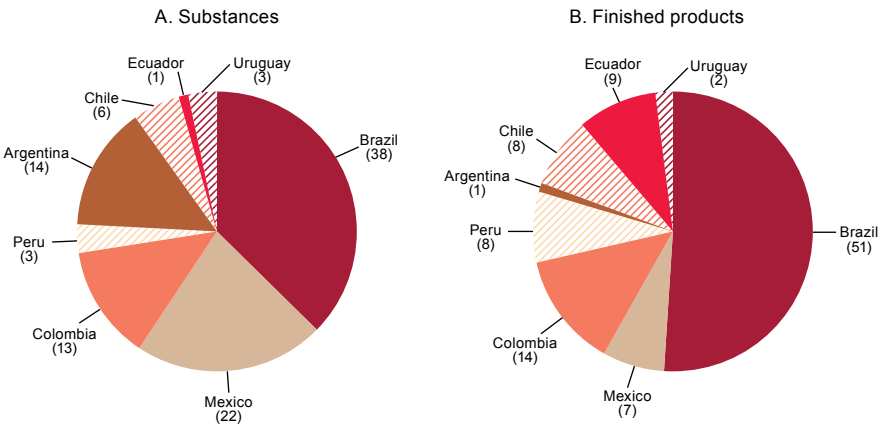
and Mexico absorb half of Korean exports of both drug substances and finished products to Latin America (see figure VI.5). Whereas Argentina prioritizes the import of drug ingredients, most Latin American countries import final drug product (see table VI.10). Exports of both finished products and ingredients increased over the past decade.

Figure VI.4
Republic of Korea: pharmaceutical product exports to Latin America, 2004-2013
(Millions of dollars)



Source: Korea Health Industry Development Institute (KHIDI), annual statistics [online] www.khidi.or.kr.

Figure VI.5
Republic of Korea: pharmaceutical exports to Latin America by destination country, average 2009-2013
(Percentages)



Source: Korea Health Industry Development Institute (KHIDI), annual statistics [online] www.khidi.or.kr.

Table VI.10
Republic of Korea: pharmaceutical exports to Latin American countries, 2010-2013
(Thousands of dollars)

Country	2010			2011			2012			2013		
	Ingredients	Final product		Ingredients	Final product		Ingredients	Final product		Ingredients	Final product	
Argentina	4 122	610		6 154	1 031		7 825	3 117		8 210	831	
Bolivia (Plurinational State of)	0	2 839	0	0	2 907	45	1 096		0	0	711	
Brazil	18 809	30 498	15 704	15 704	36 351	16 421	63 027	15 349	70 440	15 349	70 440	
Chile	47	7 715	2 523	2 523	5 659	3 881	6 237	3 910	5 949	3 910	5 949	
Colombia	233	12 810	3 554	3 554	9 728	8 654	9 038	13 462	7 764	13 462	7 764	
Dominican Republic	3	1 983	0	0	1 850	415	2 381	386	1 985	386	1 985	
Ecuador	18	7 279	142	142	6 938	1 171	6 722	267	11 974	267	11 974	
El Salvador	0	1 612	69	69	1 123	452	234	19 904	806	19 904	806	
Guatemala	47	2 679	63	63	4 729	332	1 472	722	1 206	722	1 206	
Honduras	0	1 957	218	218	2 139	0	2 304	0	122	0	122	
Mexico	7 505	7 798	10 274	10 274	5 074	10 900	10 692	12 163	12 935	12 163	12 935	
Panama	0	3 089	0	0	3 135	54	2 548	1	1 899	54	1 899	
Peru	243	8 219	638	638	5 560	3 250	7 577	1 987	14 045	1 987	14 045	
Uruguay	1 431	1 404	3 114	3 114	1 841	273	2 112	145	1 960	273	1 960	
Venezuela (Bolivarian Republic of)	163	1 979	935	935	1 362	925	1 432	1 515	6 074	925	6 074	
Total	32 621	92 471	43 388	43 388	89 427	54 598	119 989	78 021	138 701	78 021	138 701	

Source: Korea Health Industry Development Institute (KHIDI), annual statistics [online] www.khidi.or.kr.

Since 2000, several Korean pharmaceutical companies have targeted the Latin American market, also known as a *pharmerging* market:

- A Korean based pharmaceutical firm called JW Pharmaceuticals exported Imipenem (a type of antibiotic) as an active pharmaceutical ingredient (API) to Brazil from 2005 onwards. It received the Good Manufacturing Process approval by the Brazilian Health Surveillance Agency (ANVISA) in 2013. After this date, the company exported the final antibiotic product to Brazil in collaboration with a domestic company, TARGO.
- In 2013, Daewoong Pharmaceuticals exported their in-house developed product Nabota (a botulinum toxin formulation) to 15 Latin American countries, including the Bolivarian Republic of Venezuela, Colombia and Mexico.
- LG Life Sciences sold their diabetes treatment, Zemiglo, to the Mexican pharmaceutical company Stendhal.
- Dong-A Holdings established a local subsidiary (Dong-A Participações Ltda.) in Brazil in 2013 and sold its products to Latin America through this subsidiary.
- Green Cross exported GC Flu to Colombia, Guatemala, Nicaragua, Paraguay and Peru.

(a) Case study: Boryung Pharmaceutical Company

Boryung Pharmaceutical Company, a subsidiary of the Boryung Group, manufactures and sells pharmaceutical products. In 2013, it employed about 1,000 workers in the Republic of Korea and recorded US\$ 312 million in sales. According to Korean standards, it is a medium-sized company. The company produces API products, finished products and products under license. From 2008 to 2014, the company signed several contracts abroad to distribute its products, with a focus on Asia and the Pacific (see table VI.11).

The central laboratory of Boryung Pharmaceutical, which conducts the company's R&D, receives 5% of total revenues. The company specializes in producing medicines for hypertension and antiviral treatment. Their therapy area includes cardiovascular diseases, infectious diseases, the central nervous system and metabolic disorders (Global Data, 2014). The company recently announced that it will export its hypertension drug *Kanarb* (fimasartan), which it developed independently in 2010, to Mexico.

Boryung developed Kanarb by outsourcing and offshoring its clinical tests to foreign contract research organizations (CROs) in

developed countries, such as Quintiles and Covance in the United Kingdom and Harlan in Switzerland. It had to rely on foreign CROs because Korean organizations were unable to do the necessary research, lacked infrastructure and were more expensive.

Table VI.11
Boryung Pharmaceutical Company: overseas contracts, 2008-2014
(Millions of dollars)

Deal date	Deal type	Deal subtype	Partner/licensee	Region	Size of the contract
2014	Partnership	Co-marketing	Gloria Pharmaceutical	China	76
2013	Partnership	Co-marketing	Dong Wha Pharma	Republic of Korea	n.a.
2013	Partnership	Co-marketing	R-pharm	Russian Federation	15.5
2012	Partnership	Co-development	Dong Wha Pharma	Republic of Korea	n.a.
2012	Partnership	Co-marketing	Ache	Brazil	43.1
2009	Partnership	Co-marketing	Sinovac Biotech	China	n.a.
2013	Licensing Agreement		Stendhal	Mexico	26
2011	Licensing Agreement		Stendhal	Mexico	30

Source: Globaldata, *Boryung Pharmaceutical Co., LTD.-Pharmaceuticals & Healthcare- Deals and Alliances Profile*, 2014 [online] http://pdf.marketpublishers.com/global_data/boryung-pharmaceutical-co-ltd-003850-pharmaceuticals-healthcare-deals-n-alliances-profile.pdf; Ministry of Health and Welfare [online] www.mw.go.kr.

Boryung has its own manufacturing facilities and a distribution centre. The company purchases ingredients mainly from domestic SMEs, but also from companies in developed countries, such as UCB (Belgium) and Novartis (Switzerland). Some domestic SMEs also supply pharmaceutical ingredients; these companies include Shinil Pharm, Sampoong Pamakem and Samwoo Pharm. For packaging and printing, Boryung relies on a subsidiary called Yilshindang printing.

Sampoong Pamakem is a small pharmaceutical retailer that provides ingredients to final drug producers such as Boryung, Celtrion, Jeil Pharm and Hanmi Pharm. According to an interview conducted with this small firm, supplying ingredients to the large pharmaceutical companies has multiple benefits. These include the creation of trust for other potential buyers and more regular and timely payments. However, dependency on a few large firms is also risky, because if they change suppliers, the small firm may be left without clients. Therefore, SMEs need to sell to more than one client. In order for SMEs to be selected by large firms, they first have to attain a certification of good management practices and approval from the Ministry of Food and Drug Safety, as well as being competitive on prices.

Boryung manufactures its final product in the Republic of Korea, ships it to export markets and uses local pharmaceutical companies to distribute its products in these markets. For example, Boryung developed Kanarb independently, but lacked the capital to establish local subsidiaries or manufacturing plants in Latin America. Its limited export experience was also an obstacle to securing a distribution network in overseas markets. To overcome these limitations, Boryung signed a contract with a Mexican company called Stendhal, which undertook the distribution of this product under the name Arahkor in Mexico and 13 other Latin American countries (Boryung Pharmaceutical, n/d). In Brazil, Boryung signed a distribution contract with Ache, a Brazilian company. For the domestic market and two other Asian countries, Boryung chose Dong Wha Pharmaceutical to do co-marketing.

(b) Government policies

The Korean government considers the pharmaceutical industry to be a new engine for economic growth. This industry has a relatively high multiplier effect in the country's economy in terms of employment generation. However, most Korean companies have focused on competition in the domestic market through low prices instead of technology upgrading.

Because the domestic market is small and new market opportunities have been created by multiple free trade agreements, the Korean government decided to promote the overseas expansion of its pharmaceutical companies. It therefore launched the ambitious Pharma 2020 plan, which aims to increase the Republic of Korea's pharmaceutical exports between 2011 and 2020 (KHIDI, 2014).

The government supports the participation of SMEs in pharmaceutical value chains in several ways. According to a survey, the main challenge for SMEs is selling and marketing their products abroad, due to a lack of capital and experience. To address this issue, the government has organized several fairs, such as the annual Bio Korea International Convention (see [online] www.biokorea.org), where foreign buyers are invited to create business linkages with SMEs and large firms. These fairs also help SMEs find partners and establish contacts with big firms. Sampoong Pamakem mentioned that this type of exhibition helped them find purchasing companies.

The Korean government also uses export promotion to support the participation of pharmaceutical SMEs in global value chains. A notable example is the Medistar Initiative, which provides marketing and other services to SME exporters. The Korea Trade-Investment Promotion Agency (KOTRA), through its global network of offices, provides market research, interpretation services, training, matchmaking with potential

buyers, network services and marketing. KOTRA also provides a global partnering service for SMEs, which enables them to participate in global companies' value chains through actions such as joint ventures and joint R&D. When an SME is selected as an appropriate partner for a global company, KOTRA provides further assistance through the purchase of ingredients, R&D and training.

Boryung Pharmaceutical Company has benefited from the Medistar Initiative. The company initially had some difficulties exporting its newly developed drug to Latin America, where people seem to prefer traditional brands. Moreover, in this region there may be relatively less awareness of the levels and cost of R&D necessary to develop new drugs and the correspondingly higher prices, a lack of a well-developed generics market, insufficient patent protection, weak management practices and relatively high import tariffs for pharmaceuticals. It was therefore necessary to find local partners for the marketing of its product. KOTRA helped Boryung find local partners such as Stendhal in Mexico and Ache in Brazil.

The Korean government has also helped reduce institutional barriers for SMEs to export to Latin America. Different drug approval systems in different countries represent obstacles for SMEs that want to export pharmaceuticals. To facilitate this process, the KHIDI co-finances approval procedures for domestic companies in foreign countries. Another example is homologation. Ecuador was the first country in Latin America to sign a homologation agreement with the Republic of Korea. According to this agreement, once a drug is approved by the Korean Ministry of Food and Drug Safety, it is automatically approved by the Ecuadorian government. Korean Drug Co., another Korean SME in the pharmaceutical industry, benefitted from this homologation when it signed an export contract for Ecuador in 2013.

C. Final considerations

As illustrated by the case studies in this chapter, several Korean SMEs participate in the electronics and pharmaceuticals value chains led by Korean multinational corporations, which sell part of their production to Latin America. Participating SMEs supply equipment, ingredients or parts to these multinationals. In both industries, the interviewed SMEs emphasize that their large clients guarantee a stable demand for their products, improve the trust of potential new clients and sometimes transfer knowledge and skills. However, the dependency on a few large clients poses risks in terms of little negotiating power and the probability of becoming isolated if their buyers switch suppliers. Competition with other SMEs is intense, and there is pressure to lower prices in order to remain competitive.

The two case studies show interesting differences between the two value chains in terms of the Republic of Korea's position and the participation of SMEs. In the global display panel industry, the Korean government and the multinational companies LG and Samsung Display play a predominant role. Samsung Display has dozens of SME suppliers. Their participation in the value chain is stimulated by Samsung Display's open innovation strategy, as well as some government policies that improve the capabilities of small firms. In contrast, the Republic of Korea's participation in the global pharmaceutical value chain is still relatively small. Few SMEs participate in this value chain due to its high capital intensity. The majority supply ingredients, which does not involve expensive R&D. The government has supported pharmaceutical SMEs by assisting them with their marketing and creating linkages with partners in overseas markets as a way to promote their products.

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Chapter VII

Supplier development programmes in the automotive industry in Asia

Kriengkrai Techakanont¹

Summary

This chapter looks at how supplier development programmes (SDPs) in Indonesia, Malaysia and Thailand have intended to improve the capabilities of domestic small and medium-sized enterprises (SMEs) within the automotive industry. All three countries have developed programmes with Japanese car makers, including Dharma Bhakti Astra Foundation (YDBA) (Indonesia), Malaysia Japan Automotive Industries Cooperation (MAJAICO) (Malaysia) and Automotive Human Resource Development Project (AHRDP) (Thailand). These countries also implemented a similar set of industrial policies between the 1960s and 1990s as a way to protect and support domestic industries, and they later opened this sector to foreign competition. They also adopted a “competitive pathway” to enhance SME competitiveness through their participation in global value chains (GVCs). The impact of SDPs in Malaysia and Thailand appear to have been greater than in Indonesia. However, the SDP programmes in all three countries have experienced low levels of SME participation. More effective communication and higher

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commitment by governments and multinational corporations (MNCs) is crucial for promoting the role of SMEs in these production networks.

Introduction

Many economists have argued that governments should intervene in industries where markets fail to promote their development, provide an efficient allocation of resources and increase economic welfare. Successful industrial policies require a strong commitment and allocation of resources by both private and public sectors. One successful example in this regard is Japan, where industrial policies were backed by heavy State intervention and the promotion of selected industries (Behrman, 1984). However, many countries find it challenging to emulate such successful cases and achieve similar results. Moreover, it is difficult to confirm whether the success or failure of an industry is attributable to government policies (Ferguson and Ferguson, 1994). Industrial policies have to be well thought out, with clear objectives: developing countries need to identify market failures and design industrial policies accordingly.

In emerging economies, one of the goals of industrial policy is to develop the technological capabilities of small and medium-sized firms and their workforce (Kindleberger, 1966; Teece, 1977). Because knowledge is limited in these countries, they often rely on technology transfers to promote economic development (Mansfield, 1987). These transfers typically occur through foreign direct investment (FDI) and the formation of business linkages between multinational corporations (MNCs), regional value chains (RVCs), global value chains (GVCs) and domestic firms within production networks.

Technological upgrading in emerging economies is strongly related to the productivity of their small and medium-sized enterprises (SMEs), which account for the bulk of national employment and income (Levy, Berry and Nugent, 1999). The improvement of SME performance is also essential to improve income distribution and reduce poverty. In this context, policymakers in developing countries have been supporting SMEs extensively through a multitude of programmes, such as access to credit, human capital development, innovation and technology adoption, market access and infrastructure development (Tambunan, 2008; SME Corp. Malaysia, 2013). In sum, many emerging economies promote the integration of their SMEs into MNC-led production networks so that they can benefit from technological upgrading and industrialization. This mechanism has a large potential in particular within the context of Association of Southeast Asian Nations (ASEAN), due to the massive intra-industry division of labour within this association (Sato, 2013).

However, at the early stages of industrialization it is difficult for SMEs to plug into such networks, as the productivity gap between them and large firms is very large. In this situation, government intervention is needed to improve the performance of SMEs. So far, the participation of ASEAN SMEs in GVCs has been limited (Sato, 2013).

This chapter reviews the literature concerning supplier development programmes (SDPs) in the automobile industry in three countries and reports on results of interviews with key players in each SDP. These include representatives of lead firms (automobile assemblers), local institutions (policymakers and institutional representatives) and SME suppliers. The main hypothesis is that SDPs contribute in narrowing technology gaps between MNCs and local SME suppliers. The chapter is organized as follows. Section A discusses the background and provides a literature review on SDPs. Section B explores SDPs implemented in Indonesia, Malaysia and Thailand to develop their automotive industries, while section C presents some conclusions.

A. Background

In Asia, outward-oriented policies have played a key role in accelerating economic development over the past couple of decades. Because free trade has the potential to promote economic growth and reduce poverty (Bhagwati, 2004), many Asian countries have multilaterally and unilaterally reduced import barriers and signed multiple free trade agreements (FTAs) over the past two decades. These measures have boosted intra-industry South-South and North-South trade, and contributed to the expansion and upgrading of the industrial structure in many countries in the region (ECLAC, 2006).

The open FDI regime of many East Asian countries has helped to attract substantial inflows, which in turn created the potential for knowledge and technology transfers between investors and domestic firms. In particular, Japanese FDI played a crucial role in global production sharing (Ng and Yeats, 2001; Athukorala and Yamashita, 2006), the development of industrial clusters (Kimura, 2006) and the development of skills in domestic firms (Techakanont and Terdudomtham, 2004; Yamashita, 2008). Within a process of division of labour, these lead firms located their manufacturing activities according to the comparative advantages of each country in the region.

The large expansion of both trade and FDI flows in manufacturing in East Asia are expressions of how developing economies in this region have improved their technological capabilities and promoted industrialization through participation in RVCs and GVCs. MNCs have played a pivotal

role in linking the East Asian countries to these value chains and thereby spurring economic and industrial development.² The value chains have facilitated cross-border investment, production, technology transfer, trade, sourcing and the division of labour, which have created ample opportunities for both the local economy and local firms.

RVCs and GVCs can be defined as a sequence of activities along a value added production chain (Sturgeon, 2001). These activities range from product design, product development, engineering and production to sales and after-sales services. Value chains represent interfirm linkages, which are coordinated within and across a country's borders. Past studies have investigated how these activities were organized and coordinated across industries such as apparel, automobiles and electronics (Gereffi and Memedovic, 2003; Gereffi and others, 2001). The coordination of economic activities through the value chain provides opportunities for upgrading and knowledge transfers. The level of product fragmentation depends on the trade-off between the cost of production and the coordination between different locations (Jones and Kierzkowski, 2001).

Particular attention has been given to the role of lead firms in GVCs. These can be divided into producer-driven and buyer-driven value chains. In a producer-driven value chain, such as the automobile and electronics industries, production relies on the technology and research and development (R&D) of lead firms. Accordingly, the upstream sector of the value chain is managed by the lead firm, which decides how the chain should be sliced up and where the production site should be located. Decisions made by lead firms determine the upgrading opportunities available to domestic firms located in host countries. This applies not only to their affiliates, but also to independent local suppliers.

In a buyer-driven value chain, such as the apparel industry, buyers are large multinational retailers, marketers or branded manufacturers. They play a pivotal role in setting up decentralized production networks within the value chain, which are typically located in developing countries. The majority of profit comes from the combination of high value added activities, such as research, design, sales, marketing and financial services, and multinational enterprises thus act as strategic brokers (Gereffi, 1994). Entry barriers tend to be lower in buyer-driven value chains, so local firms may have easier access to production technology.

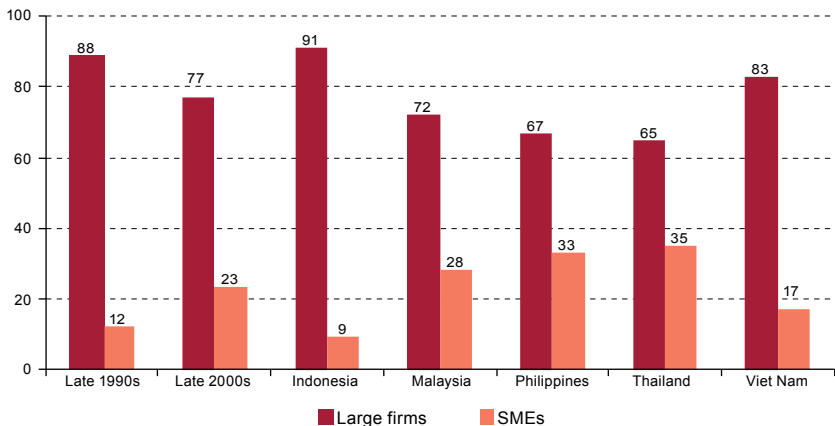
East Asian countries register a high participation in GVCs. This can be illustrated by an index that shows a country's participation in international vertically fragmented production networks, which can be calculated using a

² Other concepts similar to GVCs include global commodity chains (GCC), global production networks (GPN) (Ernst and Kim, 2002), international production networks (IPNs) and product fragmentation (Kimura, 2006; Athukorala, 2006).

multi-country input-output table, such as the Trade in Value Added (TiVA) database of the Organization for Economic Cooperation and Development (OECD). This index is calculated as the percentage of gross exports that correspond to foreign inputs (backward participation) and domestically produced inputs used in third countries' exports (forward participation). Within ASEAN, Singapore has the highest GVC participation index (71%), followed by the Philippines (67%), Malaysia (66%), Thailand (53%), Viet Nam (51%), Indonesia (44%) and Cambodia (40%). These shares were much higher than those of Latin America: Chile (52%), Mexico (42%), Brazil (36%) and Argentina (35%) (Backer and Miroudot, 2013).

The generally high participation of ASEAN countries in GVCs masks the relatively low participation of their SMEs in these value chains, with the exception of Singapore (Sato, 2013). For example, in five ASEAN member countries often referred to as ASEAN-5 (namely, Indonesia, Malaysia, the Philippines, Thailand and Viet Nam), SMEs accounted for just 23% of total exports in 2013 (see figure VII.1). Hence, there seems to be considerable room for improving links between SMEs and international production networks in this region.

Figure VII.1
Association of Southeast Asian Nations (5 countries):
share of large firms and SMEs in total exports, 2013
(Percentages)

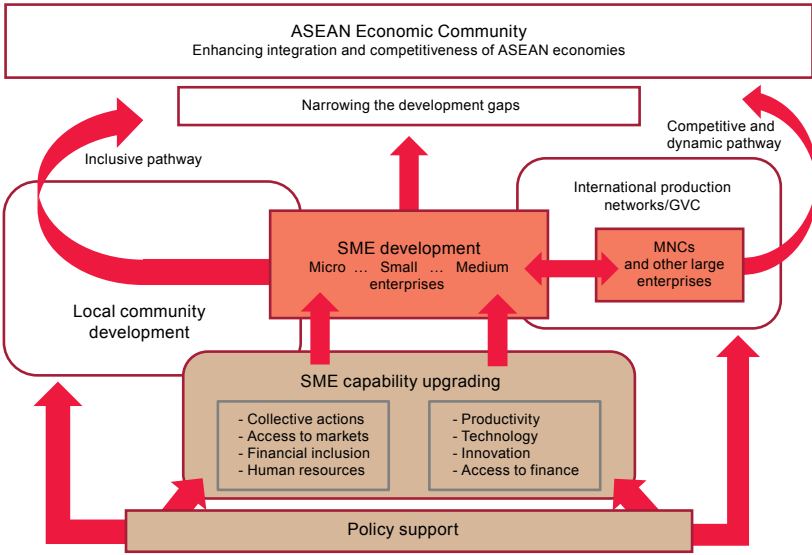


Source: Y. Sato, "Development of small and medium enterprises in the ASEAN economies", *Beyond 2015: ASEAN-Japan Strategic Partnership for Democracy, Peace, and Prosperity in Southeast Asia*, R. Sukma and Y. Soeya (eds.), Tokyo, Japan Center for International Exchange, 2013, figure 5, p. 163.

The SME sector in the ASEAN region is highly heterogeneous. In Singapore, SMEs have a relatively high level of productivity and are innovative, in part because they benefit from widespread public and

private business support programmes. In other ASEAN member countries, however, most SMEs are small, have low productivity and are located in areas with limited access to markets and credit. Business development programmes therefore need to focus on improving managerial and financial skills in these firms (Sato, 2013). There are two development routes to accomplish this: a competitive pathway and an inclusive pathway (see diagram VII.1). The first involves strategies to improve the competitiveness of SMEs through their participation in GVCs. The second seeks to upgrade the capabilities of SMEs through local communities. The two pathways are complementary: SMEs can initially take either one and later incorporate the other, or they can adopt a combination of both from the start.

Diagram VII.1
Framework of SME development in the Association of Southeast Asian Nations



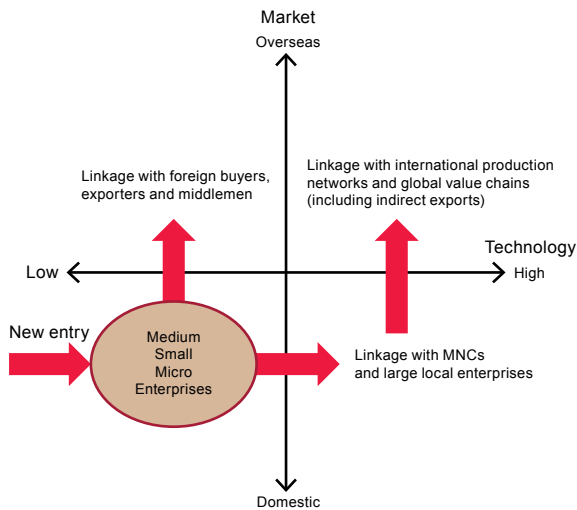
Source: Y. Sato, “Development of small and medium enterprises in the ASEAN economies”, *Beyond 2015: ASEAN-Japan Strategic Partnership for Democracy, Peace, and Prosperity in Southeast Asia*, R. Sukma and Y. Soeya (eds.), Tokyo, Japan Center for International Exchange, 2013, figure 1, p. 155.

The inclusive pathway allows SMEs to develop links with local buyers, trading companies or foreign buyers. By fulfilling customers’ requirements, an SME can increase its experience and learn about markets, design and technology, which in turn helps the firm to upgrade. Since SMEs are at a disadvantage relative to large firms, owing to their reduced size and limited capacity, government policies may be needed to assist small firms on this pathway. Examples of such policies include

the promotion of collaboration among SMEs in line with local community development, assistance in the expansion in both domestic and overseas markets, provision of basic managerial support to access credit and assistance for business start-ups.

The competitive pathway requires SMEs to prove they can meet the MNCs requirements. SMEs with low productivity need assistance to attain the required skills to become MNC suppliers. In particular, small suppliers need to enhance their absorptive capacity. SMEs are able to enter the value chain at the lower left quadrant, requiring less technical capacity and no overseas exports (see diagram VII.2). Over time, they can upgrade to higher technical levels and enter overseas markets. In short, the main hurdle for local SMEs lies in meeting the quality, cost and delivery (QCD) standards of MNCs in order to compete with stronger and larger foreign parts suppliers.

Diagram VII.2
Development paths of SMEs through business linkages



Source: Y. Sato, "Development of small and medium enterprises in the ASEAN economies", *Beyond 2015: ASEAN-Japan Strategic Partnership for Democracy, Peace, and Prosperity in Southeast Asia*, R. Sukma and Y. Soeya (eds.), Tokyo, Japan Center for International Exchange, 2013, figure 6, p. 167.

Training through business interaction may sometimes be more effective in developing the capacity of SMEs than the provision of direct support by governments (Sato, 2013). Nevertheless, SMEs still need indirect assistance, due to their weaknesses in access to markets, finance and technology. This can take many forms, including business support services, development of technical and managerial know-how,

financing for technological upgrading and infrastructure development. The latter reduces transaction costs by improving transport, logistics and telecommunications networks.

B. Supplier development programmes in the Asian automobile industry

1. Overview

Supplier development programmes were designed to help upgrade and promote the automotive sectors in some of the ASEAN-5 countries (that is, Indonesia, Malaysia, the Philippines, Thailand and Viet Nam). The ASEAN automotive industry has gradually increased production to become an export hub for Japanese carmakers. In the 1970s, Japanese automotive manufacturers entered ASEAN markets to benefit from protected domestic markets. Until the early 1990s, however, the industry grew slowly due to small domestic markets and a lack of skilled workers. ASEAN members then started to liberalize trade and promote economic integration: in 1992, they agreed to establish the ASEAN Free Trade Area (AFTA) agreement by 2010, and a common market by 2015.

The core of the ASEAN Economic Community (AEC) lies in tariff reduction agreements between member countries (ASEAN Trade in Goods Agreement), together with the adoption of Common Effective Preferential Tariffs (CEPT). Members have also adopted a regional investment incentive programme, known as the ASEAN Industrial Cooperation (AICO). This cooperation initiative, together with trade integration, has been the driving force behind regional automotive production among ASEAN members. It created opportunities for firms to utilize excess capacity and to become more specialized in specific products. MNCs were able to consolidate their production bases in Indonesia, Malaysia, the Philippines and Thailand. By 2010, import duties among ASEAN-6 members (that is, the ASEAN-5 countries plus Singapore) were almost zero for most items, favouring regional integration.

Japanese MNCs have played a crucial role in developing the ASEAN motor industry, strongly contributing to the upgrading of domestic production capacity and supporting industries. In several ASEAN countries, public policies have also promoted the participation of local firms in regional production networks (RPNs). However, in most cases, governments were unable to provide direct technical support to SMEs without the participation of Japanese firms. The inflow of Japanese capital, technology and guidance was critical for these countries to upgrade and promote their domestic automotive industry.

The three ASEAN countries selected for this research (namely, Indonesia, Malaysia and Thailand) were chosen for three reasons. First, these countries relied on similar industrial policies that gradually ratcheted up their production capacity in order to be able to join GVCs. Second, they have the largest production capacity among ASEAN countries. Third, Japanese firms played an instrumental role in upgrading local suppliers in all three countries, while public institutions played a supportive function in nurturing local SMEs. In Malaysia, the government pursued specific policies to promote the national car industry. The participation of ASEAN countries in the global motor vehicle production networks is outlined in table VII.1.

Table VII.1
Association of Southeast Asian Nations (5 countries):
overview of the automotive industry, 2011-2012

Country	Population size (millions)	Total units produced in 2012	Total units sold in 2012	Primary vehicle production
Indonesia	240	1 066 000	1 116 000	SUVs, ^a MPVs ^b and large trucks
Malaysia	28	570 000	628 000 (2011)	Passenger cars
Philippines	92	75 000	157 000	Information not available
Thailand	67	2 454 000	1 436 000	One-ton pickup trucks and eco cars ^c
Viet Nam	87	74 000	80 000	Motorcycles

Source: Thailand Automotive Institute, "Moving towards Global Green Automotive Industry", presentation at the Automotive Summit 2013, 2013.

^a Sport utility vehicles.

^b Multipurpose vehicles.

^c Environmentally friendly cars.

This chapter reviews a supplier development programme in each of the three countries. In Indonesia, the focus is on a private programme from the Dharma Bhakti Astra Foundation. In Malaysia, the chosen programme is the Malaysia Japan Automotive Industries Cooperation (MAJAICO), which was part of the Japan-Malaysia Economic Partnership Agreement of 2006. In Thailand, the chapter looks at the Automotive Human Resource Development Project (AHRDP).

Both desk-based and field-based research were conducted in order to gain a full understanding of all three programmes. An initial literature review on SDPs, industrial policy and historical developments shed light on the evolution of the automotive industry in each country. Subsequently, the field research in October 2014 consisted of interviewing the institutions that conduct SDPs, policymakers (associated with each country's Ministry of Trade and Industry), key MNCs or lead firms, and suppliers. For a list of the interviewees, see the annex. Table VII.2 presents an overview of the reviewed SDPs.

Table VII.2
Indonesia, Malaysia and Thailand: overview of supplier development programmes

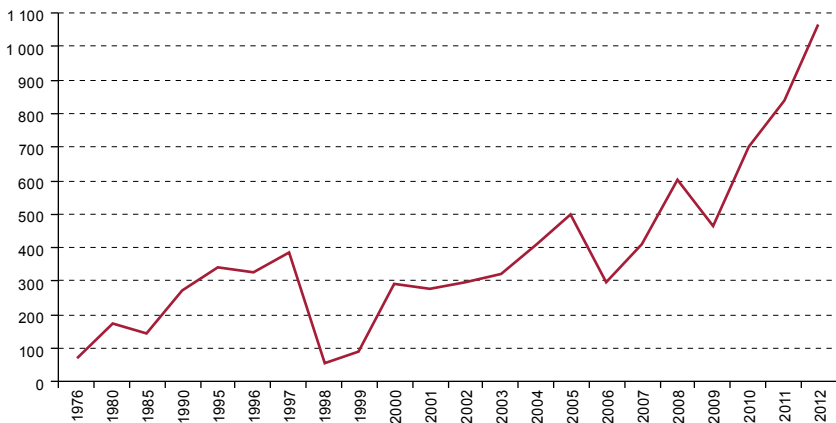
	Indonesia	Malaysia	Thailand
Programme	Dharma Bhakti Astra Foundation (YDBA)	Malaysia Japan Automotive Industries Cooperation (MAJAICO)	Automotive Human Resource Development Project (AHRDP)
Start date	1980	2006	2006
Institutions in charge	From Japan: Japanese Overseas Human Resources and Industry Development Association (HIDA). At home: government. Other parties: International Labour Organization (ILO) and United Nations Industrial Development Organization (UNIDO).	From Japan: Association for Overseas Technical Scholarship (AOTS), Japan External Trade Organization (JETRO), Japan International Cooperation Agency (JICA), Japan Overseas Development Corporation (JODC) and Ministry of Economy, Trade and Industry. At home: Malaysian Automotive Component Parts Manufacturers (MACPMA), Malaysia Automotive Institute (MAI), Malaysian Industrial Development Authority (MIDA), Small and Medium Industries Development Corporation (SMIDEC).	From Japan: Japan External Trade Organization (JETRO) and Japan International Cooperation Agency (JICA). At home: Department of Industrial Promotion, Ministry of Industry, National Institute for Skill Development (NISD), Thailand Automotive Institute (TAI), Thai Automotive Industry Association (TAIA), Thai Autoparts Manufacturers Association (TAPMA) and Thai-German Institute (TGI).
Annual budget (2013)	About US\$ 500 000	N.A.	About US\$ 500 000 (for the Toyota Production System programme)
Duration of programme	1 year	5 years	5 years
Number of MNCs that participated	8 (through Astra)	2 (through JODC)	4
Number of SMEs that participated	8 379 firms	83 firms (target 150 by 2011)	233 firms
Main strengths	1. Supported SMEs in several sectors 2. Strong support from the Astra group 3. Finance and facilitation	1. Strong government support 2. A clear plan and road map to promote suppliers by 2020	1. Strong support from multinational corporations 2. Support covered a wide range of automobile producers
Main weaknesses	1. Low SME participation rate 2. Passive role of government 3. Insufficient government budget	1. Low SME participation rate	1. Low SME participation rate 2. Insufficient supplier development programme budget

Source: Prepared by the author.

2. Indonesia: Human Resource Development Project

Compared with Malaysia and Thailand, Indonesia is a latecomer to the automotive industry. However, from the perspective of multinational original equipment manufacturers (OEMs), Indonesia probably has the greatest potential among ASEAN countries, owing to its large population and its rapidly growing middle class. Indonesia had the lowest GDP per capita in 2014, with just over US\$ 10,200, versus US\$ 24,500 in Malaysia and US\$ 14,400 in Thailand (IMF, 2014 [AUTHOR: this reference is not included in the bibliography. Please add]). After 2009, many OEMs also took interest in domestic market export activities. By 2012, automobile production had reached one million units, growing by an impressive annual rate of 23% from 2003 to 2012 (see figure VII.2). The rapid growth of the automotive industry after 2000 resulted, in part, from industrial and trade policy reforms (see box VII.1).

Figure VII.2
Indonesia: passenger car production, 1976-2012
(Thousands of units)



Source: Prepared by the author, on the basis of information from the Association of Indonesian Automotive Industries (GAIKINDO).

Toyota has played a crucial role in developing suppliers in Indonesia since its establishment in 1970 in Sunter (Jakarta). The Sunter plants undertake five activities: casting, stamping, engine assembly, packing and waste water treatment. In 1998, Toyota Indonesia expanded its capacity and established a new assembly site in West Java, Karawang International Industrial City (KIIC), which developed into a new automotive cluster (Irawati, 2012).

Box VII.1**Indonesia's policies to promote the automotive industry**

The Indonesian government has promoted the country's automotive industry since the 1960s by adopting multiple import substitution policies. Until 1977, multinationals could only invest in the country through joint ventures with domestic firms. This strategy was believed to promote the participation of local firms in global production networks. In addition, imports of completely built-up (CBU) cars were restricted, while complete knock-down (CKD) imports were promoted through tax reductions. The government also implemented local content requirement (LCR) regulations, similar to Malaysia and Thailand. However, Indonesia's LCRs incorporated additional features, such as a specific list of auto parts to be produced at home.

In 1977, the government introduced a Mandatory Deletion Programme, which forced car producers to "delete" 30 automotive parts from the imported CKD kits and produce these in the country. If car producers failed to comply with this rule, they suffered a 100% import duty on any imported components used that would otherwise be produced locally. This programme failed, however, due to the limited capacity and scale of local supporting industries to produce these parts.

In 1993, the Deletion Programme was replaced by another incentive scheme aimed at stimulating producers to use more domestic components. The incentives took the form of lower import duties on imported parts, components and semi-finished parts, based on the degree of local content incorporated in the final assembled cars. The higher the local content, the lower the import duty. However, local content calculations were complicated and revised several times. In 1995, a deregulation package granted zero import duty on CKD imports if local content exceeded 40% of commercial vehicles and 60% of passenger vehicles. CBU import duties ranged from 5% to 100% on commercial cars and 200% on passenger vehicles.

In 1996, the Indonesian government announced the National Car Plan. It selected the State-owned car manufacturer PT Timor Putra Nasional (TPN), headed by the youngest son of former President Suharto, to be the only producer of national cars. TPN received technical support from Kia Motors Corporation in terms of manufacturing and design assistance. However, as TPN mainly sold imported Kia cars under CBU conditions, there was little effect on local suppliers. This policy resulted in international criticism, especially from leading global car producers. The case was referred to the Dispute Settlement Body (DSB) at the World Trade Organization (WTO), which decided in 1998 that the 1996 national car programme and the 1993 tax incentives for local content achievement had to be abolished within 12 months. It also demanded the elimination of local content requirements by January 2000. Indonesia complied with these decisions, and its market for both finished cars and car parts became more open.

Source: Prepared by the author, on the basis of Dessy Irawati, *Knowledge Transfer in the Automobile Industry: Global-Local Production Networks*, London, Routledge, 2012.

Toyota's technology transfers are limited to its first-tier suppliers through vendor technology improvement programmes. These, in turn, are expected to train other suppliers. This local support was stepped up with the implementation of Toyota's International Multipurpose Vehicle project in 2004, which aimed to optimize its global manufacturing and supply systems for pickup trucks and multipurpose vehicles. Under this project, a large part of the Asian production of gasoline engines was concentrated in Indonesia. For this purpose, Toyota created a new Operation Management Development Division (OMDD) in 2009 to coordinate and develop local suppliers. Even though these activities have turned out to be effective in developing supplier capabilities, benefits are confined to Toyota Motor Manufacturing Indonesia (TMMIN) supplier networks.

Toyota Indonesia's largest national first-tier car parts manufacturer (Dharma Bhakti) Astra operates a local SME development programme through its foundation (YDBA). The foundation was created in 1980 and has operated for over three decades; its budget in 2014 was US\$ 460,000. Its goal is to improve the quality, cost, delivery and innovation (QCDI) capacity of its (potential) suppliers. Astra's demand for supplies was US\$ 340 million in 2007 and US\$ 503 million in 2008.

The YDBA programme targets both existing and potential suppliers of Astra. It focuses on training and mentoring in areas such as Astra management, business development, corporate social responsibility, effective work relationships, environment, entrepreneurship, health and safety, human resource development, maintenance, production and quality control. Training courses are financed from a variety of sources (see table VII.3). Firms that want to participate in any programme have to pay a subsidized fee, which is at least one-tenth of the actual cost.

The YDBA SDP and the Astra Group training programmes are organized in conjunction with multiple other organizations, including private companies (such as Astra Daihatsu Motor, Astra Honda Motor, Astra Isuzu Motor and Astra Otoparts), government agencies (including the Business Development Agency and Micro Financial Institution), international organizations (the International Labour Organization and the United Nations Industrial Development Organization) and development cooperation agencies (such as the Japanese Overseas Human Resources and Industry Development Association, HIDA) (see table VII.3).

Table VII.3
Indonesia: collaboration on the Dharma Bhakti Astra Foundation (YDBA)
supplier development programme

Other collaborating agencies	Training activities	Funding
Affiliate companies	<ul style="list-style-type: none"> • Training and mentoring for micro-, small and medium-sized enterprises (MSMEs) • Establishment of business development agencies (BDAs) and microfinance institutions (MFIs) • Training improvement modules • Financial value chain • MSME development blueprint 	Funding by Astra
Ministry of Industry, Ministry of Education and Ministry of Cooperatives and Small and Medium Enterprises	<ul style="list-style-type: none"> • Training, workshops and seminars for MSMEs • Exhibitions • Consultancy • Establishment of BDAs 	Funding by Astra and government
State-owned enterprises	<ul style="list-style-type: none"> • Training and workshops for MSMEs • Training and workshops for young mechanics 	Funding by State-owned enterprises
Private companies outside the Astra Group	<ul style="list-style-type: none"> • Establishment of BDAs • Training and workshops for MSMEs • Facilitation of financing 	Funding by other private companies
International Labour Organization (ILO)	SCORE project facilitation and monitoring	Funding by Astra and ILO
Japanese Overseas Human Resources and Industry Development Association (HIDA)	<ul style="list-style-type: none"> • Training and benchmarking for MSMEs in Japan • Benchmarking in Japan for YDBA instructors 	Funding by Astra and HIDA
United Nations Industrial Development Organization (UNIDO)	Benchmarking for MSME development	Funding by UNIDO

Source: Prepared by the author, on the basis of YDBA (2014).

One of the training workshops led by the Astra Group is the development programme for automotive and heavy equipment SME subcontractors, which is conducted in collaboration with representatives in charge of SMEs at Astra manufacturing business units and groups. With technical and management skills training, subcontractors are able to gradually improve their performance standards and QCDI. Another example is the two-wheeler service sector workshop, where YDBA collaborates with Astra Honda Motor - Training Centre (AHM-TC). In the four-wheeler sector, it teams up with Toyota Astra Motor-Training Centre (TAM-TC), Astra Daihatsu Motor-Training Centre (ADM-TC) and Isuzu Astra Manufacturing Indonesia-Training Centre (IAMI-TC).

YDBA also organizes training workshops for subcontractors led by retired Astra employees with specific competencies. Business consultation is offered to Astra-retired employees who wish to become entrepreneurs. YDBA workshops and training centres promote technical

and management skills around the country. Workshops that meet Astra's standard qualifications can be designated as supervised workshops under the auspices of the Astra Group network, as with the Authorized Workshop under Daihatsu Supervision or the partner workshops of PT Asuransi Astra Buana.

YDBA evaluated its SDP in terms of the number of participating firms and workers (see table VII.4). The largest group of beneficiaries is a group of subcontractors supplying parts to Astra's business value chain, including nine clusters with 254 subcontractors employing 27,000 workers in 2014. Another group is the independent service stations (including two-wheels and four-wheels), which have benefited from Astra's standard qualification programme. YDBA also provides training to Astra Honda Authorized Service Stations (AHASS).

Table VII.4
Indonesia: number of micro-, small and medium-sized enterprises (MSMEs)
and workers that benefited from the Dharma Bhakti Astra Foundation (YDBA)
supplier development programme, 2011-2014

Clusters	2011		2012		June 2014	
	Number of MSMEs	Head count	Number of MSMEs	Head count	Number of MSMEs	Head count
Subcontractors linked to Astra business value chain	184	23 776	223	26 555	254	27 475
Member of business development agencies	1 503	9 664	1 660	10 019	2 510	13 228
Member of micro financial institutions	4 313	4 629	4 255	5 097	4 255	5 097
Four-wheel general service station	241	3 084	262	3 700	278	3 772
Astra Honda authorized service stations	607	3 642	628	3 768	628	3 768
Handicraft makers	144	720	163	1 664	163	1 664
General manufacturing not linked to Astra business value chain	51	945	51	945	51	945
Two-wheel general service station	135	512	180	641	180	641
Honda service station partner	60	180	60	180	60	180
Totals	7 238	47 152	7 482	52 569	8 379	56 770

Source: Prepared by the author, on the basis of information from the Dharma Bhakti Astra Foundation (YDBA).

The strength of the programmes was the direct assistance and capacity-building provided to micro-, small and medium-sized enterprises (MSMEs), with inputs from multiple organizations from the private and public sectors. Moreover, several programmes were subsidized in-kind by Astra subsidiaries through the provision of Astra expert consultant services. This training and mentoring system led to productivity improvements, cost reductions and the expansion of SMEs.

One weakness of the programmes was the lack of promotion, such that many SMEs were unaware of these opportunities. This led to a lower number of participants than expected. Another limitation was the reluctance of MSMEs to pay even low training fees. In this context, the future challenge of YDBA is to increase the number of participating MSMEs. This is important because the automotive sector is expanding rapidly, and more competent suppliers are needed.

3. Malaysia Japan Automotive Industries Cooperation Project³

Despite efforts to promote the automotive industry in the 1960s, car production in Malaysia grew slowly and was mostly oriented towards the domestic market. The slow growth of Malaysian exports is sharply illustrated by a comparison with Thailand: by 2012 exports from Malaysia (US\$ 271 million) amounted to a mere 13% of exports from Thailand (US\$ 19.586 billion) (Athukorala, 2014).⁴ In 2012, Malaysia produced 570,000 units, versus 1.02 million units in Indonesia and 2.45 million units in Thailand. The slow growth of the automotive industry over the past five decades can be attributed, in part, to the country's trade and industry policies since the 1970s (see box VII.2).

Box VII.2

Malaysia: policies to promote the automotive industry from the 1960s onward

The automobile industry was one of the first targets of the import substitution industrialization policies in the 1960s. In 1963, the government created the Motor Vehicle Assembly Committee (MVAC), which regulated prices and imports, promoted local content and controlled assemblers and models. In 1966, imports tariffs ranged from 30% to 80% on built-up vehicles, depending on engine capacity, and 20% to 30% on CKD kits and car parts (Bowie, 1991). In 1967, the first assembly plant (a joint venture with Volvo) started operations. In 1970, the government approved another six assembly plants. By 1974, the annual output of locally assembled cars reached 48,000. Most auto-part producing firms were owned by Japanese companies (Doner, 1991). According to Athukorala (2014), by 1980 there were 11 assembly plants in Malaysia, which produced 122 models of 25 makes of passenger cars and commercial vehicles. Fiat, Mitsubishi, Volvo, Honda, Peugeot, Mercedes Benz, Toyota, Daihatsu, Ford, Chrysler, Land Rover and Citroën were involved in assembly activities through equity and/or technical ties with Malaysian (mostly Chinese) partners.

³ This section is based on Sadoi (2013) and documents received from JETRO experts and the Malaysian government websites, <http://mai.org.my/> and www.smecorp.gov.my/.

⁴ Moreover, in 1985, total production of automobiles in Malaysia amounted to 69,000 units, compared with 83,000 units in Thailand. By 1990, Malaysia had expanded production to 117,000 units, while Thailand produced 305,000 units. Malaysia reached its peak production in 1997 with 335,000 units, falling behind Thailand, which produced 559,000 units in 1996.

Box VII.2 (concluded)

The low domestic content of locally assembled cars was a concern for the government. Locally produced parts (such as tires, batteries, paints and filters) were low-tech and amounted to less than 5% of the car value. In 1972, the government implemented a localization policy, which aimed to increase local content (by weight) to 10% in 1972 and 35% in 1982 (Lim and Onn, 1983). It also introduced a Mandatory Deletion Programme, similar to that of Indonesia, in 1979. This programme removed certain components from the permitted imports lists, which created market opportunities for local part manufacturers.

In 1983, the government created the national car company Perusahaan Otomobil Nasional (Proton). This company was a joint venture between the State-owned Heavy Industries Corporation of Malaysia (HICOM) and Mitsubishi Motors Corporation. It aimed to promote the production of domestic parts and components through local industries. It had to compete with foreign and local ethnic Chinese capital. To guarantee the demand for this new car, the government raised import tariffs and forced other car makers to produce models that did not directly compete with Proton cars (Doner, 1991). Proton was also granted import and domestic tax concessions and indirect subsidies (Athukorala, 2014).

In 1985, Proton released its first model, Saga. Sales reached 70,000 units, accounting for 45% of all annual passenger car sales. The local content of the Saga amounted to 47% of its value, compared with 35% for other locally assembled vehicles. Over the next two years, production dropped to 33,500 due to the economic recession, but production recovered sharply in 1990, reaching 82,000 units and accounting for 70% of total sales. Domestic content had reached 80% by then. The two national car companies had captured more than 90% of the domestic car market by 2000 (Athukorala, 2014). Their cars' local content remained at 80%, with 4,850 parts being produced in the country compared with 228 parts in 1985.

Trade and industrial policy regimes remained practically unchanged until 2005. In that year, automobile import tariffs ranged from 42% to 80% on completely knocked down kits, from 140% to 300% on completely built-up cars and from 25% to 30% on most automobile parts and components. While other members of the Association of Southeast Asian Nations reduced import tariffs, Malaysia was allowed to exclude most automobile products (218 tariff lines) from tariff cuts because of the difficulties faced by domestic manufacturers. National cars were cheaper than the competition largely because of import taxes and subsidies, so reducing these mechanisms would have put the competitiveness of national car manufacturers to the test.

Source: Prepared by the author, on the basis of Alasdair Bowie, *Crossing the Industrial Divide: State, Society, and the Politics of Economic Transformation in Malaysia*, New York, Columbia University Press, 1991; Richard Doner, *Driving a Bargain: Automobile Industrialization and Japanese Firms in Southeast Asia*, Berkeley, University of California Press, 1991; P. Athukorala, "Industrialisation through state-MNC partnership: Lessons from the Malaysia's National Car Project", *Departmental Working Papers*, No. 2014-06, Australian National University, 2014; and Chee Peng Lim and Fong Cahn Onn, "Ancillary firm development in the Malaysian motor vehicle industry", *The Motor Vehicle Industry in Asia: A Study of Ancillary Firm Development*, Konosuke Odaka (ed.), Singapore, Singapore University Press, 1983.

Japan has played an important role in the indigenous automotive industry since the 1970s, despite the fact that Malaysia also had a national car policy. Japanese firms were dominant foreign investors and were active in creating automotive clusters. They not only targeted the domestic market, but also promoted exports to other ASEAN countries. To attract more foreign direct investment (FDI) from Japan, Malaysia signed an economic partnership agreement with that country in 2006. Both governments agreed to reduce tariffs and eliminate other trade barriers. In addition, they promoted technology transfers and the development of human resources through the establishment of the Malaysia Japan Automotive Industries Cooperation (MAJAICO) project in the same year, which was a public-private programme between both governments and the private sector.

MAJAICO was a five-year project aiming to upgrade the capabilities of 150 local suppliers in order to convert them into exporters. The project provided training programmes for human resources development and technical upgrading in such fields as moulding and dies and business development. In 2011, the project reached its target in terms of the number of participating suppliers. The MAJAICO programme had 10 components, each of which had several partners from Japan and Malaysia (see table VII.5).

The MAJAICO Automotive Technical Experts Assistance Programme (see table VII.5) ran 219 projects with 83 companies from 2006 to 2011. Under this programme, Japanese experts taught local staff to become master trainers. In addition to providing training sessions in Malaysia, the programme sent 22 Malaysian members to Japan over the five-year project to acquire skills through on-site internships. These skills related to the production of parts and components, such as designing presses and die facilities. Trainees came from Malaysian suppliers, Perodua, Proton and the Standards and Industrial Research Institute of Malaysia (SIRIM) (Sadoi, 2013).

An example of the activities coordinated under the programme is the implementation of a lean production system (LPS) in 15 Malaysian suppliers, with the assistance of seven Japanese experts. The training covered 38 items in production management and just-in-time production systems. An expert or master trainer rated suppliers on their performance in each area: level 3 was the average that suppliers should achieve, and level 5 was the highest LPS level. For example, the technical level of a group of Bumiputera vendors was far lower than the average in Japanese supply chain networks. The programme enabled some vendors to converge to the Japanese standards. MAJAICO compared suppliers' productivity, quality, stock and die change times before and after the programmes. It concluded

that all suppliers achieved level 3 or higher. Moreover, productivity increased by 45%, on average, inventory levels were reduced by 60%, noncompliance with quality standards fell by 55% and die change times dropped by 60%.

Table VII.5
Malaysia: the Malaysia Japan Automotive Industries Cooperation (MAJAICO) programme, 2006-2011

Programme	Details	Malaysian partner	Japanese partner	
A1	Automotive Technical Experts Assistance Programme	Japanese experts sent to Malaysian vendors' establishments	Small and Medium Industries Development Corporation (SMIDEC)	Japan Overseas Development Corporation (JODC)
A2	Enhancement of mould and die centres in Malaysia	Japanese experts sent to Malaysia to train Standards and Industrial Research Institute of Malaysia (SIRIM) staff	SIRIM	JODC
A3	Capacity building for auto parts suppliers in the area of vehicle type approval	Facility established to approve vehicle types	Road Transport Department	Ministry of Economy, Trade and Industry
B	Automotive skill training centre in Malaysia	Development of 171 specialized training modules	Ministry of Human Resources	Japan External Trade Organization (JETRO)
C	Automotive skill training centre in Japan	Malaysian auto company staff fly to Japan for training	Ministry of Human Resources	Association for Overseas Technical Scholarship (AOTS)
D	Establishment of a components and parts testing centre in Malaysia	Improve SIRIM capacity through knowledge transfers	SIRIM	Japan International Cooperation Agency (JICA)
E	Business Development Programme	Trade missions to both countries	Malaysian Automotive Component Parts Manufacturers (MACPMA)	JETRO
F1	Cooperation in automotive market information	Exchanges of industry information	Malaysian Industrial Development Authority (MIDA)	Japan Automobile Manufacturers Association (JAMA)
F2	Consultations regarding joint-venture contracts	Assist companies to establish joint ventures	MIDA	JAMA
F3	Cooperation in auto exhibitions for Malaysian auto manufacturers	Trade exhibitions and seminars to be held in both countries	Malaysia External Trade Development Corporation (MATRADE)	JETRO

Source: Hanny Hamzah, "The Relationship between Japan and ASEAN Countries in the Automotive Industry through Regional Trade Agreements", Ph.D. Dissertation, Graduate School of East Asian Studies, Yamaguchi, Yamaguchi University, 2012, unpublished.

The MAJAICO programme, funded entirely by the Japanese government, formally ended in 2011. It was a good example of how public-private partnerships should be developed. The transfer of knowledge from Japanese experts to domestic Malaysian suppliers was crucial to upgrade their capacity. At the same time, the commitment and participation of the Malaysian government contributed to the strength of the programme. However, a weakness of the project was the low interest of local firms in participating in the programme. The local companies' motivation to learn new skills and adopt new technology was reduced, which is also illustrated by their low spending on innovation, research and development.

After its completion in 2011, the project was extended with increased funding from the Malaysian government, which financed 50% of the project in 2011, 75% in 2012 and 100% in 2013. The government also invested in two other SDP programmes: the Lean Production System (LPS) and the Automotive Supplier Excellence Programme (ASEP). They form part of the Malaysia Automotive Supply Chain Development (SCD) Roadmap, which aims to promote a competitive and sustainable domestic automotive industry. Emphasis is on upgrading domestic vendors to become both regional and global suppliers and to enhance the development and operational effectiveness of their replacement parts supply chain by 2020.

The LPS programme is coordinated by the Malaysia Automotive Institute (MAI) and is a continuation of the A1 programme of MAJAICO (see table VII.5). It is a systematic approach to identifying and eliminating waste (non-value-added) activities through continuous improvement. Adapted from the Toyota Production System (TPS), this approach benefits all implementing companies in terms of the reduction of costs, the production of high-quality products and the achievement of fast delivery benchmarks. It is being implemented in batches of 20–25 vendors over six-month periods. The target is to develop around 300 vendors, including first-tier, second-tier and third-tier suppliers, from 2012 and 2015. All vendors will be assessed at the end of the programme, against several internationally recognized manufacturing management systems.

The Chief Executive Officer of the Malaysia Automotive Institute, Madani Sarari, described the programme as follows: "MAI has remodelled the LPS programme to include the use of a special engineering application. This application will allow the participating companies to experience and virtually define, plan, create, monitor and control all production processes from early process planning and assembly simulation to a complete definition of the production facility and equipment. It will assist companies to achieve maximum production efficiency, lower cost, improve quality and reduce time to market, hence will help to intensify

the results of the LPS programme... MAI is working with industry leaders and academic institutions to help identify current shortfalls and address this by coordinating programmes/initiatives that will enhance the overall competitiveness of the automotive industry" (see [online] www.mysinchem.com/node/66591).

The ASEP programme aims to upgrade local automotive suppliers to world-class levels of competitiveness and sustainability. This is done by providing technical assistance and consultancy to increase productivity and competitiveness, optimize resources and improve discipline and structure in their business processes.

ASEP will assist local vendors in benchmarking themselves against the global automotive supply chain. The exercise will compare the current situation of the local vendors against vendors in developing or developed countries, such as Australia, India, Japan and North America, who have already implemented their respective ASEP programmes. The outcome of the ASEP comparison exercises will provide Malaysia with its own ASEP programmes to adapt the business culture of the local automotive producers in order to enhance industry competitiveness.

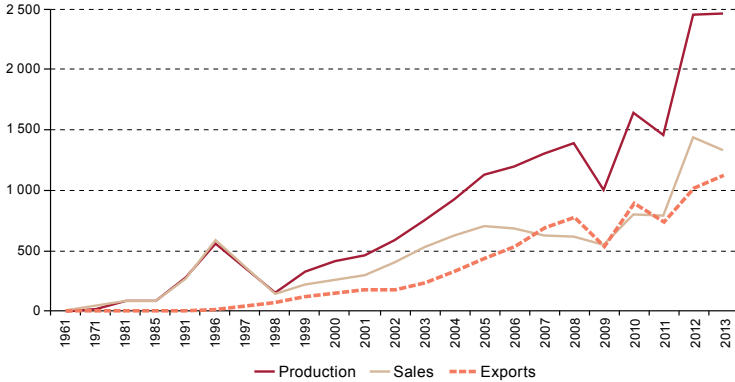
4. Thailand: Human Resource Development Programme

Similar to Indonesia and Malaysia, Thailand adopted multiple trade and industrial policies to promote local automotive support industries, including import bans and tariffs and local content requirements. However, instead of implementing specific programmes, the government adopted a flexible approach to facilitate cooperation between Japanese car makers and Thai auto-parts associations (Doner, 1991; Techakanont, 2010; Techakanont and Charoenporn, 2011). The local content requirement (LCR) was quite lenient and was used to gradually compel original equipment manufacturers (OEM) to deepen their supporting industries. This helped local parts manufacturers to participate as first-tier suppliers. Automotive production and exports from Thailand have surged since 2000, making the industry far more export-oriented. In 2013, production reached 2.4 million units, of which domestic sales accounted for 1.3 million units while the rest was exported (see figure VII.3).

The production expansion after 2000 can be attributed to trade liberalization and changes in the automotive manufacturers' strategies after the financial crisis of 1997 (see box VII.3). After 2000, Thailand became an attractive destination for several automotive manufacturers, contributing to the industry's rapid expansion. However, foreign manufacturers soon realized that the Thai support industry had insufficient technical capacities. As part of the 2007 Japan-Thailand Economic Partnership

Agreement (JTEPA), the Japanese government agreed to support the Thai automotive industry by strengthening the competitiveness of parts producers while promoting the free trade of automotive parts.

Figure VII.3
Thailand: automobile production, sales and exports, 1961-2013



Source: Prepared by the author, on the basis of data from the Federation of Thai Industries.

Box VII.3
Thailand: policies to promote the automotive industry from the 1960s onward

The automotive sector was a priority industry in the country’s import substitution policies from the 1960s onward. In 1961, total sales of automobiles reached 6,080 units, while domestic production accounted for only 525 of the total. From 1970 to the mid-1980s, the domestic market grew gradually, as did production volumes. From 1975 to 1999, the government progressively stepped up local content requirements to 70% for pickup trucks and 54% for passenger vehicles (Poapongsakorn and Techakanont, 2008). In the 1990s, automobile production increased significantly, along with sales. This was due, in part, to the appreciation of the Japanese yen in 1985, which encouraged Japanese car and parts manufacturers to relocate some of their production to Thailand. In addition, the government had gradually liberalized the automotive industry, through deregulation in the early 1990s and the elimination of the local content requirement (LCR) regulations in 1999.

The Asian financial crisis, triggered by the devaluation of the baht in July 1997, strongly hit the automotive manufacturing industry. A decline in domestic demand forced manufacturers to cut production (Terdudomtham, Techakanont and Charoenporn, 2002). In this context, car assemblers reoriented their production from the domestic market to exports. Japanese assemblers played a crucial role in the development of automobile production and supporting industries in Thailand.

Source: Prepared by the author, on the basis of N. Poapongsakorn and K. Techakanont, “The development of automotive industry clusters and production network in Thailand”, *Production Networks and Industrial Clusters*, I. Kuroiwa and M.H. Toh (eds.), Singapore, ISEAS, 2008; T. Terdudomtham, K. Techakanont and P. Charoenporn, “The changes in the automotive industry in Thailand”, *Japanese Foreign Direct Investment and the East Asian Industrial System*, H. Huraguchi and K. Shimokawa (eds.), Springer Link, 2002.

The private sector participated actively in the development of local suppliers and supporting industries to improve the quality of car parts, which they were forced to source domestically from 1975 to 1999 (Techakanont and Charoenporn, 2011). Japanese auto makers in Thailand relied extensively on multi-tiered supplier networks and have established long-term relationships based on trust and rent sharing. Although exports of automobiles from Thailand started in the 1990s, Toyota's Innovative International Multipurpose Vehicle (IMV) project, launched in 2004, was the most significant effort to integrate Thailand into global production networks. Toyota selected Thailand as the major production base for the project, followed by Indonesia, Argentina and South Africa. The project aimed to export to countries in Africa, Asia, Europe, Latin America, the Middle East and Oceania. To raise the productivity of its suppliers and supply chains to international standards, Toyota assisted its first-tier supplier firms to transfer organizational routines, knowledge and technical skill to their second- and third-tier suppliers (Poapongsakorn and Techakanont, 2008) (see box VII.4).

Box VII.4

Toyota knowledge-sharing in Thailand, 1975 to 2014

Toyota facilitated interfirm knowledge-sharing through supplier associations, knowledge-transfer consultants and small-group learning teams (or *jishuken*) (Dyer and Nobeoka, 2000). Toyota created the Toyota Cooperation Club (TCC) and established a training centre in 1982, when they had around thirty to thirty-five suppliers. This number increased to more than 160 members (as first-tier suppliers) in 2014. The TCC organized activities to increase capabilities in the Toyota Production System. It shared explicit and tacit knowledge on its Production System through company visits by Toyota's trained consultants. As a member, suppliers received free consulting services. Experts at Toyota Thailand also provided Toyota Production System (TPS) training to parts manufacturers in other member countries of the Association of Southeast Asian Nations. Another initiative was the coordination of learning activities in small groups, intended to encourage suppliers to learn and share specific tacit knowledge with each other. These groups helped to build strong ties among team members through formal core group activities and informal social networks. In sum, Toyota was a key player in supplier development activities and was effective in knowledge-sharing within its supplier network and in upgrading local supplier firms.

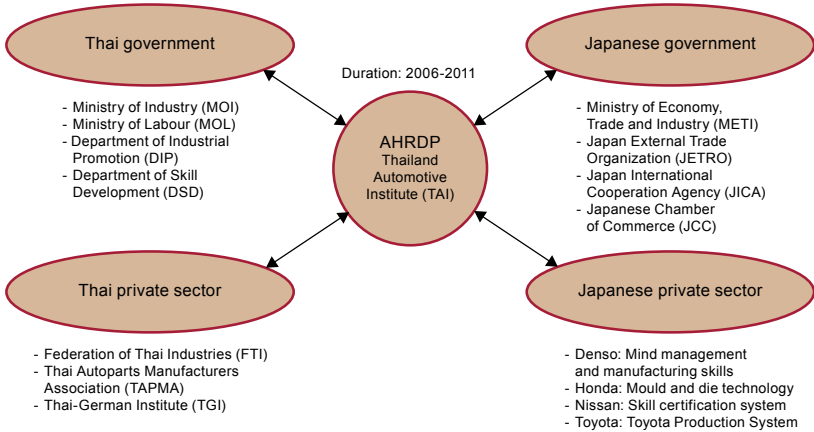
Source: Prepared by the author, on the basis of J.H. Dyer and K. Nobeoka, "Creating and managing a high-performance knowledge-sharing network: the Toyota case", *Strategic Management Journal*, vol. 21, No. 3, Wiley, 2000; and K. Techakanont and P. Charoenporn, "Evolution of automotive clusters and interactive learning in Thailand", *Science, Technology and Society*, vol. 16, No. 2, SAGE, 2011.

Apart from private initiatives, the largest public-private supplier development effort was the Thailand Automotive Human Resource Development Project (AHRDP) that ran from 2006 to 2010. With strong support from the Japanese government and four Japanese private firms, this project aimed to developed specific automotive human resource skills

among first-tier and second-tier suppliers that are pure Thai or Thai-majority holding firms. For this purpose, the Japanese dispatched experts to Thailand and received trainees in Japan. Each participating firm had to focus on one of four areas: production management; mould and die technology; manufacturing skills and mind formation; or skill certification systems.

The four private Japanese companies were strongly committed to the project, and each had their own goals.⁵ They planned the programme, designed courses, implemented curricula and evaluated results. In the first stage, the experts coached local trainers to become master trainers and to disseminate knowledge to local suppliers. The Denso and Nissan programmes provided both formal and informal training (on-the-job training), whereas Toyota (TPS model line) and Honda (mould and die technology) mainly used informal training practices. The structure of the AHRDP framework is outlined in diagram VII.3.

Diagram VII.3
Thailand: Automotive Human Resource Development Project, 2006-2010



Source: Prepared by the author, on the basis of Thailand Automotive Institute, "Moving towards a Global Green Automotive Industry", presentation at the Automotive Summit 2013, 2013.

In total, 233 SMEs and 7,151 workers participated in four expert courses organized by the four Japanese automobile manufacturers as part of the AHRDP (see table VII.6). A poll of 200 case studies conducted by the TAI on the results of the AHRDP revealed that on average suppliers

⁵ The goal of Toyota was to introduce its Production System; Nissan aimed to introduce its skill certification systems; Honda sought to develop the skills of mould and die engineers and to increase the available skilled labour, and Denso focused on the development of skills and workmanship training.

were able to improve productivity by 30% to 50%, reduce work-in-process inventory by 25% to 75% and free up 30% to 50% of factory space.

Table VII.6
Thailand: number of participants in the Automotive Human Resource Development Project, 2006-2010

Organizing company	Course	Examiners	Trainers	Trainees
DENSO	Middle management and manufacturing skills	-	60	2 643
Honda	Mould and die technology	-	26	2 096
Nissan	Skill certification system	132	189	453
Toyota	Toyota Production System (TPS)	-	43	1 959
	Total	132	318	7 151

Source: Prepared by the author, on the basis of information from the Thailand Automotive Institute (TAI).

Except for the general evaluation, it was difficult to estimate the rate of return on specific training provided by the AHRDP, as most courses did not outline specific goals. TPS activities were an exception, as they involved specific targets and monitoring of productivity improvements and cost reductions. Implementation of TPS took four months and involved four steps.⁶

According to an interview with a Thai supplier representative, his company participated in three TPS courses when competitors did not apply. Each course cost only US\$ 2,000, for which he received expert visits one or two days per week. After each course, he and his TPS team looked for another area of improvement and reapplied. As a result of these courses, his firm was able to save 50% of factory space and invest into new production capacity to develop new products. His company was also able to increase trust and confidence with potential Japanese customers who audited the factory. As a result, the company won new orders from a Japanese air conditioning producer in Thailand.

The main challenge of the AHRDP was the low participation rate. Although training was subsidized and even free for some courses, few local firms were interested in sending their staff to participate. This meant that participation levels did not meet the programme's potential. An exception was the TPS course, which proved particularly successful in improving suppliers' productivity.

⁶ The first step was to define areas for improvement. In the second step, suppliers attempted to improve the production line to achieve one-piece flow, which was the target of TPS. Experts checked the conditions and gave on-site weekly advice. In the third stage, improvements and changes had to be maintained in daily production. At this stage, the results of the training could be observed in reductions in work-in-process inventory, cycle times, defect rates and operating space. Finally, in the fourth step, suppliers would be able to implement the pull system, which required suppliers to prepare a presentation for consultants to evaluate training results.

In 2012, the Automotive Human Resources Development Institute Project (AHRDIP) replaced the AHRDP. This new 2012–2016 programme is similar to AHRDP, but has a higher level of technological content. The project maintains the partnership between Thailand and Japan, in which both public and private sectors work together. The project's overall goal is to develop Thailand into a world class sustainable production base for the automotive sector, with qualified personnel and experts. Other goals include solving the shortage of skilled labour and improving the human skills in the automotive industry.

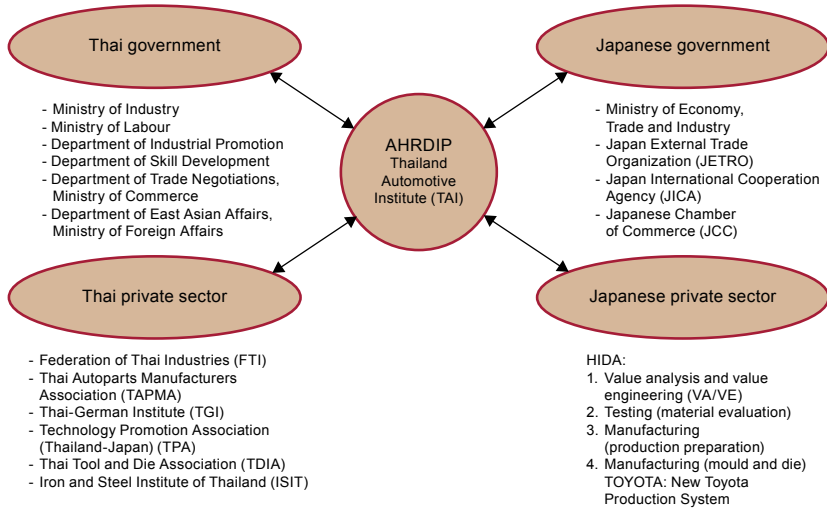
The specific objectives of AHRDIP are to develop high-standard training systems and curricula, train Thai instructors, enhance the effectiveness of skills training and establish a human resources development (HRD) centre to support the development of manufacturing personnel, testing and R&D. The organization of the project is similar to that of the AHRDP (see diagram VII.4). Japan's Ministry of Economy, Trade and Industry allocates the budget for Japanese experts, while the Japanese auto industry (private sector) is responsible for sending the Japanese experts to Thailand to train Thai instructors. Japanese companies in Thailand will contribute to the programme by dispatching Thai master trainers to instruct Thai staff. The Thailand Automotive Institute (TAI) acts as a communication link between the public sector and the auto parts industry, selects and dispatches Thai trainer candidates, employs trained Thai master trainers and Thai trainers and manages the skill certification system.⁷

The new AHRDIP incorporated several recommendations to improve on the AHRDP project. First, AHRDIP will provide better information to potential beneficiaries, and the results of past programmes will be better publicized to attract new participants. Second, more intensive follow-up assessments are planned to ensure that training services are effective and sustainable. Third, AHRDIP will help small companies to better plan their training management initiatives. Fourth, AHRDIP activities will not be limited to a single training service provider. The project will focus on higher value added activities, such as R&D, value analysis and value engineering (VA/VE), testing, mass production preparation, higher levels of TPS and higher levels of mould and die manufacturing competencies. Finally, more time is scheduled for an effective assessment of the training courses.⁸

⁷ The specific goals are in six areas; (1) manufacturing: to teach 1,000 trainers and train 255,000 personnel; (2) testing: to teach 200 trainers and train 30,000 personnel; (3) R&D: to teach 100 trainers and train 15,000 personnel; (4) training curricula: to formulate human resources development curricula in the areas of skilled labour and trainers, manufacturing engineers and entrepreneurial skills for top management; (5) training systems: to develop a single training system for human resources development; and (6) certification: to issue certificates to trainers on completion of their training.

⁸ Due to public budget constraints, it has not been possible to implement all foreseen projects under the AHRDIP.

Diagram VII.4

Thailand: Automotive Human Resources Development Institute Project, 2012-2016

Source: Prepared by the author, on the basis of Thailand Automotive Institute, "Moving towards Global Green Automotive Industry", presentation at the Automotive Summit 2013, 2013.

C. Conclusions

SMEs are crucial to emerging economies, as they create employment, improve the income distribution, reduce poverty, contribute to export growth and promote entrepreneurship. However, many SMEs have low productivity levels and face difficulties upgrading their performance. Participation in global production networks led by MNCs offers opportunities for SMEs to modernize. Policymakers in developing countries have therefore been supporting SMEs through various programmes and initiatives to promote access to credit, the development of skills, the adoption of technology, access to markets and the development of infrastructure.

This chapter has examined public and private supplier development programmes (SDPs) aimed at improving the performance of SMEs and their linkages with MNCs, with a focus on the automotive sector in Indonesia, Malaysia and Thailand. All three countries promoted the development of this sector through import prohibitions, local content requirements and tariff protection from the 1960s to the 1990s. These measures aimed to promote supply links between SMEs and MNCs. As a result of the 1994 WTO Uruguay agreement and unilateral reduction of trade barriers, these countries liberalized the automobile sector in the 1990s. The development of information technology and logistics

networks further contributed to changing the environment for foreign manufacturing investment, leading MNCs (mainly from Japan) to set up assembly operations in these countries. The main benefits for MNCs were their lower cost, the size of the domestic market, the availability of supporting industries and liberalized trade policies. In terms of production and exports, Indonesia and Thailand have been more successful in attracting FDI in the automotive sector than Malaysia.

All three governments implemented SDPs to upgrade local SMEs and their linkages with MNCs. These programmes shared some similarities. The SDPs implemented in Malaysia and Thailand were the fruit of public-private partnerships under the Economic Partnership Agreements with Japan. Multiple public and private Japanese organizations (such as AOTS, JAMA, JETRO and JODC) coordinated and provided technical support to local SMEs in these two countries through their automotive institutes (MAI and TAI, respectively). In turn, these institutes coordinated actions with local firms.

It appears that both the Malaysian SDP (called MAJAICO) and the Thai SDP (called AHRDP) were successful, as governments extended these programmes after the initial five years. Both countries focused on particular initiatives within their SDP: the lean production system (LPS) in Malaysia and the Toyota Production System (TPS) in Thailand. These specific initiatives played a key role in upgrading management technology and improving productivity among suppliers. Over time, the technological content of the support was increased and focused on higher value added activities, such as R&D, testing capabilities and value analysis and value engineering (VA/VE).

In Indonesia, the SDP (called YDBA) was mainly driven by the private sector. The key player was the Astra Group, which is the largest national car parts producer. It had several joint ventures with leading Japanese car manufacturers, such as Honda and Toyota. The strength of YDBA was its direct assistance to MSMEs across several industries, including the automotive sector. Astra's training and mentoring system contributed to productivity improvement, cost reduction and business expansion.

Nevertheless, the SDPs in all three countries suffered from a lack of awareness and participation on the part of the SMEs. To enhance their impact, these programmes should be promoted using more effective advertising to attract sufficient interest from SMEs. Technical support could focus on higher value added activities, such as mould and die manufacturing capabilities, preparation of mass production, R&D, testing and VA/VE. These skills are essential for global automobile manufacturers when selecting parts suppliers.

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Annex VII.A1

List of interviews

Country	Name	Position	Institution/firm
Indonesia	Erman Aminullah	Researcher	Centre for Science and Technology Development Studies, Indonesian Institute of Sciences (Pappiptek-LIPI)
Indonesia	Galuh Syahbana Indraprahasta	Researcher	Centre for Science and Technology Development Studies, Indonesian Institute of Sciences (Pappiptek-LIPI)
Indonesia	Trina Fizzanty	Director	Centre for Science and Technology Development Studies, Indonesian Institute of Sciences (Pappiptek-LIPI)
Indonesia	A. Daniel Harbianto	Staff	Yayasan Dharma Bhakti Astra
Indonesia	Mohammad Igbal	General Manager	Yayasan Dharma Bhakti Astra
Indonesia	Soerjono Soerjono	Director	Ministry of Industry
Indonesia	Yan S. Tandiele	Head of Sub-Directorate of Industrial Components	Ministry of Industry
Indonesia	Tulus Tambunan	Head	Trisakti University
Malaysia	Mohd Zahid Abdullah	Director	Ministry of International Trade and Industry
Malaysia	Noor Wahida Noordin	Director	Ministry of International Trade and Industry
Malaysia	Ravi CK Raman	Senior Principal Assistant Director	Ministry of International Trade and Industry
Thailand	Pawakiat Keratichevanun	General Manager	Bitwise (Thailand) Co., Ltd.
Thailand	Atthawit Techawiboonwong,	Directory	Thailand Automotive Institute
Thailand	Monthon Suppagumneard	Assistant Manager	Thailand Automotive Institute
Thailand	Monthai Thailert	Deputy General Manager	Toyota Motor Asia Pacific Engineering & Manufacturing Co., Ltd.
Thailand	Ponlatep Pantanakul	Senior Adviser	Toyota Motor Asia Pacific Engineering & Manufacturing Co., Ltd.

Chapter VIII

Promoting business linkages between large and small firms: the experience of the United Nations Conference on Trade and Development

*Andrew Berry
Fulvia Farinelli¹*

Summary

This chapter outlines the importance for small and medium-sized enterprises (SMEs) of participating in global value chains (GVCs) in developing countries as a vehicle to improve productivity and create employment. In practice, however, GVC participation is constrained by major challenges in terms of accessing finance, obtaining quality standard certifications and upgrading technology. The United Nations Conference on Trade and Development (UNCTAD) has developed business linkage programmes that are designed to upgrade and

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increase the capacity of SMEs by generating linkages between transnational corporations (TNCs) and SMEs. This chapter presents the characteristics of these programmes and those implemented in Argentina and Brazil, while also reflecting on the Mexican experience. The case studies show that such programmes can assist SMEs in upgrading production and increasing capacity, and can help TNCs establish a local supplier network, which leads to a win-win situation for all participants. However, programmes are only successful when policies designed to attract foreign direct investment (FDI) encourage TNCs to transfer technology and knowledge to domestic SMEs. Also, a critical mass of both TNCs and SMEs is required, along with a long-term commitment from all participants, as benefits are neither instant nor automatic.

Introduction

Trade liberalization, the spread of information technology and the reduction of transport costs have all contributed to the international fragmentation of the life cycle of a product or service, as production, distribution and recycling have been transferred into global value chains (GVCs) over the last two decades. Countries, industries and firms can integrate and participate in different ways in a GVC. Transnational corporations (TNCs) often lead the chain and focus on their high value added core activities, while “delocalizing” their lower value added activities to developing countries. Delocalization can take two forms: either TNCs establish a subsidiary or they subcontract to a local firm (UNCTAD, 2001).

There are many potential advantages for developing economies that participate in GVCs. Inward FDI may create technology spillovers to local firms, expand international trade, improve human capital skills, encourage competition and enhance the development of local firms. Similar benefits can arise when local companies participate directly in GVCs, including small and medium-sized enterprises (SMEs), through their supply of products or services to TNCs. In addition to entering a global market, SMEs can access specialized industry knowledge, finance, international markets and technology and enhance their management skills. TNCs also benefit from business linkages through reduced production and transaction costs, as well as the ability to adapt their products easily and quickly to local markets (UNCTAD, 2006). All these factors may contribute to enhancing the productivity of SMEs and increasing their workers’ wages.

The realization of these potential benefits depends crucially on the types of policies used to attract foreign TNCs and promote the sharing of technology with local firms through the creation of sustainable business linkages. For this purpose, governments need to create an environment that encourages foreign TNCs to invest, private enterprises to upgrade and innovate and TNCs and SMEs to forge business linkages in the long term as a win-win development strategy (UNCTAD, 2010a).

This chapter discusses how governments can develop sustainable business linkages between TNCs and SMEs that lead to a win-win situation for both types of firms and give the latter the opportunity to join a GVC. The structure of the chapter is as follows. The first part discusses the conceptual aspect of business linkages and the UNCTAD methodology for business linkage development. The second part evaluates three country case studies where business linkage programmes have taken place: Argentina, Brazil and Mexico. In two of the cases, the programmes were directly implemented by UNCTAD through its network of EMPRETEC centres.² The final section provides some concluding remarks.

A. The rationale behind the UNCTAD business linkage programmes

Small and medium-sized enterprises (SMEs) are prevalent in Latin America and other developing economies, typically accounting for an average of about 96% of all businesses³ within each country (see table VIII.1). They often face difficulties in entering GVCs due to their supply-side capacity constraints, which include a lack of entrepreneurial and management skills, access to technology and financial resources, a shortage of trained personnel and marketing, price and logistical barriers. Therefore, SMEs in these countries need to improve their capacity and competitiveness in order to take full advantage of the benefits from participating in a GVC. One way for an SME to enter a GVC is through the development of business linkages with lead firms (UNCTAD, 2010a). TNCs have the ability to coach SMEs either upstream or downstream within the GVC. TNCs can help to modify and improve SME suppliers' products and the quality of their services and logistics, as well as assisting in lowering their costs.

² EMPRETEC is an integrated capacity-building programme of UNCTAD that has been established in 36 countries across the developing world. The EMPRETEC methodology, developed at Harvard, is based on a unique behavioural approach to entrepreneurship training.

³ Micro-enterprises are excluded from the analysis.

Table VIII.1
European Union and Latin America (selected countries):
share of firms by size, 2010
(Percentages)

	Small and medium	Large	Total
Argentina	97.8	2.2	100
Brazil	93.1	6.9	100
Chile	93.8	6.3	100
Colombia	95.6	4.4	100
Ecuador	93.8	6.3	100
El Salvador	95.7	4.3	100
Mexico	95.7	4.3	100
Peru	98.9	1.1	100
Uruguay	96.4	3.6	100
European Union	97.5	2.5	100

Source: Ministry of Industry, Argentina, *Pymes: protagonistas por dinámica, innovación y creatividad*, Buenos Aires, 2014.

Governments have changed their policies towards creating business linkages. Until the late 1990s, many governments promoted business linkages between TNCs and SMEs by imposing different kinds of compulsory requirements on TNCs. Examples include specifying a minimum amount of local content in their products and restricting the number of foreign managers employed by their foreign affiliates. However, these policies often proved to be ineffective (UNCTAD, 2013a). From the late 1990s onwards, many governments began removing previous restrictions and implementing different initiatives to assist domestic SMEs. For example, supplier development programmes (SDPs) aim to close the information and capability gaps between SME suppliers and potential TNC buyers. Developing countries that have successfully implemented such initiatives include Chile, Jordan, Malaysia, Mozambique, Singapore, South Africa and Thailand.

In the 1980s, some rapidly growing developing economies demonstrated that they could expand their international trade by developing their domestic firms, without necessarily having to supply or seek TNC assistance. However, the international context has changed with the growing importance of TNCs in international trade and production. According to the *World Investment Report* (UNCTAD, 2013b), more than 80% of global trade is linked to the international production networks of TNCs. GVCs therefore form an almost unyielding nexus between trade and investment. Countries with a greater presence of FDI relative to the size of their economy tend to have a higher level of GVC participation and thus are able to generate relatively more domestic value added from trade.

The future growth of exports is expected to be increasingly centred on the presence of GVCs, offering new opportunities to developing countries' SMEs but also posing some risks, namely that of being completely marginalized or confined to low value added activities. To upgrade within complex value chains, developing countries must better coordinate investment and trade policy and help domestic SMEs to grow and form stable linkages with TNCs (UNCTAD, 2004).

For SMEs, access to finance is especially difficult as the banking sector in developing countries often has little capacity to offer the required funding at favourable interest rates. A potential source of long-term financial support is foreign direct investment (FDI). Therefore, attracting FDI should be a high priority for some developing countries. When FDI is well integrated in the country, it has the potential to assist local SMEs in upgrading their capacity and gaining access to international markets (UNCTAD, 2006). However, without sufficient incentives to encourage foreign TNCs to implement essential capacity-building initiatives or provide technical upgrading assistance to local firms, FDI may not meet its full development potential. It may even lead to negative effects, such as driving out competition and crowding out domestic companies. Government policies to attract FDI must therefore include measures that will support local SMEs and extract the full potential of FDI.

In the late 1990s, UNCTAD undertook an analysis of the impact of FDI on export competitiveness. The study found that deepening business linkages between TNCs and SMEs in developing countries could further develop the capacity of the latter (UNCTAD, 2001). Business linkages have allowed SMEs in developing countries to access international markets, secure funding and improve their management skills (UNCTAD, 2004). It is therefore vital for developing countries to develop the capacity and technical capabilities of their SMEs so that they can better take advantage of GVCs and increase the country's participation in the global economy.

Based on these findings, UNCTAD developed its business linkage programme to develop sustainable business linkages between TNCs and SMEs. This requires encouraging programme partners to ensure linkages are maintained beyond the life of the project. UNCTAD programmes are multi-stakeholder and include relevant government departments or agencies, SMEs, TNCs, business associations, business services providers and financial institutions (UNCTAD, 2010b). They have been implemented in 12 countries in very diverse sectors, including agribusiness, construction, manufacturing, mining, services and tourism.

B. Business linkages: some conceptual considerations

There are two types of business linkage initiatives that can improve the capacity of developing countries' SMEs. The first is public-private partnerships, which take place in a wide range of value chain activities and sectors. They typically involve a complex coalition of partners, such as donor agencies and public, private and non-profit actors. These actors pool their resources and use their comparative advantages to facilitate the upgrading of domestic suppliers. Public-private partnerships provide an opportunity for SME suppliers in developing countries to add value and increase capacity in order to enter and upgrade in GVCs. These suppliers typically face a number of challenges in participating in GVCs: first, they face operational difficulties, such as inadequate transport infrastructure and high electricity costs that raise their production costs; and second, they often have limited capacity to engage in effective relationships in an international network. Public-private partnerships may help address these challenges, as well as improve the governance and corporate social responsibility standards of GVCs. A successful partnership requires that all stakeholders' interests be taken into account to make sure they are committed and that clear goals are in place (UNCTAD, 2013a).

Business linkages are seen as a win-win arrangement for both SMEs and TNCs. There are four types of business linkage: backward linkages between TNCs and suppliers, linkages between technology partners, linkages with customers (also known as forward linkages) and spillovers (financial, knowledge, among others) (UNCTAD, 2010a). This chapter focuses specifically on backward linkages between TNCs and SMEs and examines their effectiveness for upgrading SMEs in developing countries.

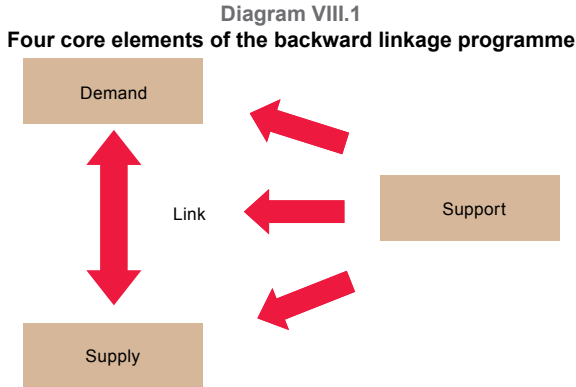
Domestic backward linkages with suppliers occur when TNCs buy parts, components, materials and services from local suppliers, which are often SMEs, instead of importing them internationally. The main goal of backward linkages is to reduce the capacity and information gaps between TNCs and SMEs (UNCTAD, 2010a). TNCs and local suppliers form either arm's-length transactions or close inter-firm cooperation, depending on the types of advantages offered by local firms. Backward linkages strengthen the industrial base of developing countries and generate economic activity and employment by increasing the demand for domestically supplied inputs. Business linkages can also produce a transfer of technology and skills from TNCs to SMEs, allowing them to improve their product and service offerings. They can provide access to international markets, if local suppliers can meet the international quality and production standards demanded by TNCs. Moreover, these linkages may attract further FDI as

domestic suppliers produce products and services for TNCs, allowing for quicker delivery at lower prices than imported equivalents. In order to attract FDI, local SMEs need to demonstrate flexibility and the ability to deliver on quality, reliability and cost. This, in turn, allows TNCs to lower costs, receive products more quickly and change specifications, while being able to closely monitor their suppliers (UNCTAD, 2006).

The promotion of backward linkages may be an effective mechanism to promote the inclusion of SMEs in GVCs. A business-to-business programme seeks to identify less sophisticated goods and services demanded by TNCs that can be supplied by small companies. Whereas a decade ago job creation and financial inflows were considered sufficient benefits for the host country, nowadays many countries expect TNCs to also fulfil corporate social responsibilities. One of these could be the implementation of a backward linkage programme. Adopting such a programme not only provides social benefits for local SMEs, but also allows the TNCs to develop a network of local suppliers to reduce costs and dependency on imported inputs. Some TNCs extend their corporate social responsibility initiatives to include local governments, communities and sometimes even their competitors. This strategy has been pursued by several automotive TNCs, such as Daimler Chrysler, Fiat, Tata, Toyota and Volkswagen. Several of these programmes have been very effective, although SMEs may be vulnerable to receiving unfair treatment if they are overly dependent on supplying a single TNC or if the TNC is not ready to reward upgrading efforts with higher prices for the inputs provided (UNCTAD, 2006; UNCTAD, 2010a).

The main concept behind forming backward linkages is to promote and assist local SMEs in becoming first-tier suppliers of goods and services to TNCs, thereby maximizing domestic supply and discouraging foreign imports. The main strategy of any programme must therefore be to increase the capacity of local SMEs so that their products meet the international requirements of TNCs and international markets, including standards and certification requirements (UNCTAD, 2006). Since the process is led by the private sector, participation can only be on a voluntary basis. TNCs have to be involved in the selection process, otherwise they are unlikely to participate in the programme. The aims of the programme have to be mutually beneficial to both sides, which results in a win-win situation. The SME selection process has to be thorough in identifying those that have the potential to upgrade and improve capacity within a limited time frame. Constant monitoring of performance and assistance is also required to ensure that all SMEs remain on target as planned. The programme needs to be accompanied by supporting policies to attract TNCs and FDI and encourage the sharing of knowledge and technology (UNCTAD, 2010a).

The design of a backward linkage programme should take into consideration four core elements, in addition to the country’s general context with respect to culture, industry, market and social conditions (UNCTAD, 2006) (see diagram VIII.1). The first element is demand, specifically the demand of TNCs for local products and services. To obtain the best terms and conditions for suppliers, the programme needs to involve a critical mass of lead firms. The second element is supply, which relates to the domestic suppliers involved in the programme. The suppliers determine the level of success of a programme, based on their ability and capacity to supply goods and services to lead firms. Therefore, the programme should select a sufficient number of suppliers that can prove their potential ability to meet stringent TNC requirements. They should also be able (with support) to comply with international standards for quality, performance, delivery and compliance.

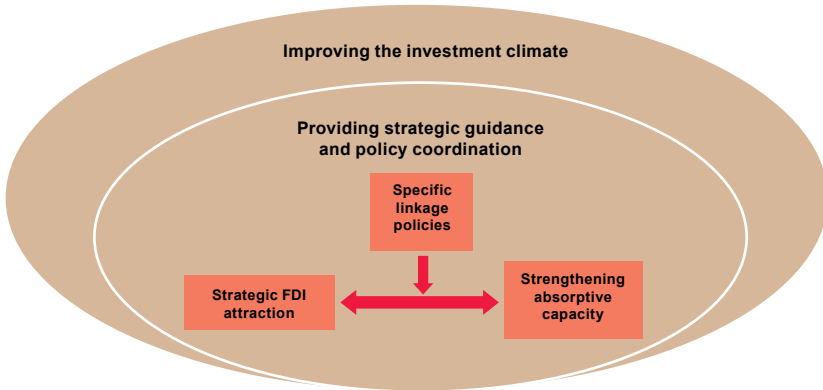


Source: Prepared by the authors on the basis of United Nations Conference on Trade and Development (UNCTAD), *Deepening Development through Business Linkages*, Geneva, 2006.

The third element is the support given to SMEs to upgrade their human resources, management, production processes and technology, as well as to improve their access to credit and other financial services. Assistance is also pivotal in helping SMEs achieve the international standards imposed by TNCs. The last core element is linking, which represents an effective selection mechanism that allows TNCs to identify the best local suppliers for their requirements. Lead firms are unlikely to participate in a backward linkage programme if they are unable to maintain control over the process of selecting their suppliers and it is therefore necessary to install mechanisms that give lead firms the final say in the selection process.

The presence of TNCs in a country does not mean that backward linkages will occur automatically. To establish a sustainable ongoing linkage development programme, governments need to implement coherent policies that ensure continued upgrading of local capacity and promote the inclusion of local SMEs in GVCs. Diagram VIII.2 shows the integration of the four key complementary policy areas that make up the UNCTAD analytical framework of a systemic policy approach to linkage building. The framework was developed to be conducive to the attraction, development and sustainability of linkages (UNCTAD, 2010a).

Diagram VIII.2
UNCTAD integrated policy framework to promote business linkages



Source: United Nations Conference on Trade and Development (UNCTAD), *Integrating Developing Countries' SMEs into Global Value Chains*, Geneva, 2010.

The first area is the improvement of the investment climate and overall competitiveness. This requires a transparent and enforceable regulatory environment for foreign investors and SMEs. In developing countries, the latter often suffer from high regulatory burdens, which can impede their competitiveness and access to finance and prevent them from increasing their capacity to the level required to supply a TNC. Other policies are also needed to improve competitiveness. These include initiatives aimed at reducing the amount of red tape, creating tax benefits to establish business linkages or invest in labour training, increasing the protection of intellectual property rights and investing in infrastructure projects. To promote linkages between TNCs and SMEs, it is particularly useful to create cluster zones. These help to attract TNCs and generate a greater labour pool of specialized and experienced workers. The development of technology parks, in combination with initiatives that

strengthen technical education and managerial skills, can help promote innovation and increase the specialized local labour pool that, in turn, supports the growth of SMEs (UNCTAD, 2006).

A second area is strategic FDI attraction. Solely attracting FDI through general policies that provide incentives for TNCs to move to the country may lack the potential to encourage economic development. Consequently, governments need to put in place specific programmes and policies to make the most of FDI, so that it not only helps develop the economy but also facilitates the growth and competitiveness of local SMEs. One policy that governments can implement is the specific targeting of TNCs that are willing to share knowledge and technology with local SMEs (UNCTAD, 2006).⁴

The third area is the strengthening of absorptive capacity by increasing the capacity of SMEs to establish business linkages. This can be achieved by facilitating knowledge and skill sharing between TNCs and SMEs, which helps the latter develop their management skills and improve capacity. These efforts will contribute to the creation of a critical mass of entrepreneurs and firms that have the potential to upgrade from purely domestic operations to the international stage (UNCTAD, 2010a).

The fourth area is the adoption of specific linkage policies to motivate cooperation between TNCs and SMEs, forming the basis of their linkage development. Additional aims are to eliminate the information gap between domestic and international firms and to enable negotiations on the cost of upgrading the technological base of SMEs (UNCTAD, 2010a).

C. Case studies

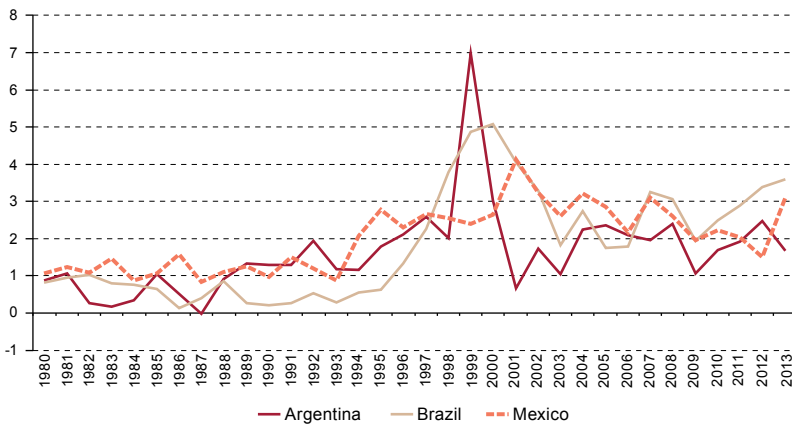
This section reviews selected business linkage programmes in Argentina, Brazil and Mexico that aimed to develop sustainable linkages between foreign TNCs and domestic SMEs. From the early 1990s onwards, these countries experienced major inflows of FDI after they abandoned most of their import substitution industrialization policies and implemented a wide range of macroeconomic and structural reforms. These three countries are among the top destinations in Latin America for inward FDI. Most of the FDI they receive is from member countries of the Organization for Economic Cooperation and Development (OECD) (Ernst, 2005; Egaña del Sol and Micco, 2014).

⁴ For example, the Malaysian government developed a policy that offered tax or investment benefits and tax deductions to TNCs in specific industries in return for participating in support programmes for domestic SMEs.

Argentina received considerable FDI inflows from 1992 to 1998, when it was a prominent destination among emerging economies (Gallagher and others, 2008). The country’s participation in the establishment of the Southern Common Market (MERCOSUR) in 1991 contributed to the FDI increase between 1989 and 1992. The inflows continued to grow until 1999, when they peaked at US\$ 23.9 billion (Ernst, 2005). Brazil began its economic reforms later than Argentina and therefore FDI flows did not take off until 1994. Inflows peaked at US\$ 32.8 billion in 2000 before falling sharply in 2003 (Ernst, 2005).

Mexico liberalized its economy and actively encouraged foreign direct investment from the late 1980s onwards. In January 1994, it signed the North American Free Trade Agreement (NAFTA) with Canada and the United States. Mexico’s entry into NAFTA accelerated FDI inflows, led by the United States. From 1990 to 1995, Mexico was the largest recipient of FDI inflows in Latin America. This reflected increased competition from Asian countries in markets such as clothing, computing and automotive equipment, which forced TNCs based in the United States to delocalize production to Mexico, where labour costs were much lower (ECLAC, 2001).

Figure VIII.1
Argentina, Brazil and Mexico: FDI inflows, 1992-2013
(Percentages of GDP)



Source: Prepared by the authors on the basis of World Bank, World DataBank [online] <http://databank.worldbank.org/data>.

The growing presence of TNCs and the associated capital inflows in these three countries have certainly provided macroeconomic benefits in terms of the balance of payments. However, the microeconomic effects are

less clear-cut as these firms created few backward linkages with domestic suppliers. The quality of domestic goods and services was often insufficient, and there was strong competition from international suppliers (Ernst, 2005).

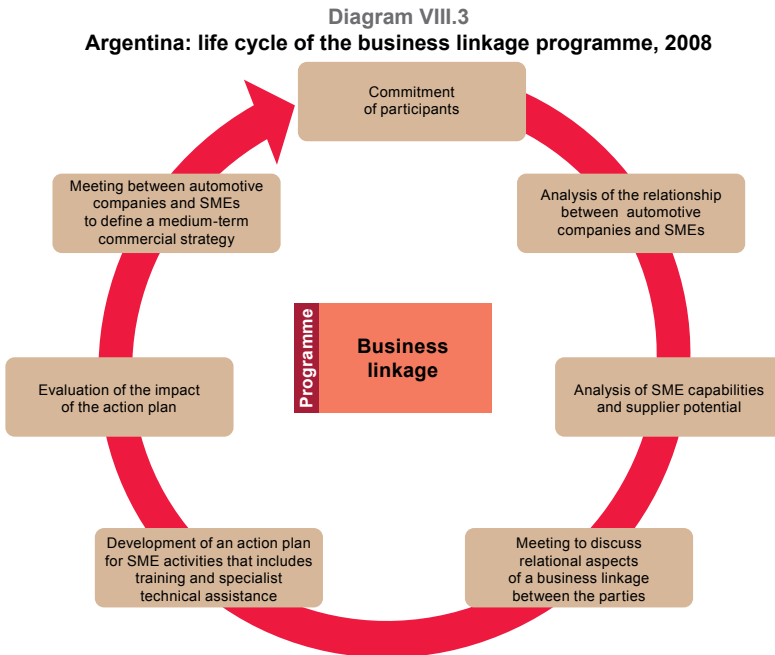
1. Argentina

Argentina has a relatively dense network of SMEs that have the potential to participate in TNC supplier networks. This is illustrated by the net creation of 210,000 companies from 2003 to 2012, most of which were SMEs. This number included the creation of almost 20,000 enterprises in the high technology and design sectors. This increase in the number of firms contributed to the creation of around 2.8 million new jobs, of which 500,000 were in manufacturing. In 2012, SMEs accounted for 99% of all companies, employing 60% of workers and contributing 45% to total sales. Also, two thirds of all SMEs are over 10 years old (Ministry of Industry, Argentina, 2013).

The first business linkage project conducted by UNCTAD in Argentina focused on the automotive sector. In 2008, UNCTAD evaluated the participation of domestic SMEs in selected value chains and designed a programme for their upgrading and development. A background study suggested the dairy and automotive industries were priority sectors for such a programme. The automotive sector in particular looked promising, being the third largest export sector. Moreover, 90% of over 400 domestic car part producers were SMEs. The programme aimed to assist domestic SMEs and develop a mechanism to support matchmaking between TNCs and SMEs. Another goal was to promote cooperation between several institutions involved in the promotion of business linkages. The project partners included Banco de la Nación (the national development bank), the EMPRETEC Argentina Foundation, the Development Bank of Latin America (CAF) and UNCTAD. All stakeholders formed a steering committee and signed a memorandum of understanding.

The project started in November 2008, with EMPRETEC Argentina as the main implementing partner. The pilot project started with 12 SME suppliers and three TNC car manufacturers including Fiat, Renault (both based in Cordoba) and General Motors (GM) (based in Santa Fe). The pilot project attracted US\$ 150,000 from participating companies and US\$ 36,000 from CAF. Its first phase focused on a needs assessment of the beneficiaries, which highlighted the following bottlenecks preventing local SMEs from linking up with the three TNCs: access to credit and banking services; insufficient human resources and technology to upgrade production; difficulty in obtaining international quality standard certificates, such as those issued by the International Organization for Standardization (ISO); and the need to develop managerial procedures.

To overcome these bottlenecks, a series of training workshops for SMEs and TNC partners were organized. The workshops focused on practical business and entrepreneurial skills, strategic planning and quality management. The project implementation encompassed three main operational phases. The first provided coaching sessions and technical assistance to identify and solve common challenges among selected SME suppliers. The second organized meetings between TNCs and SME providers to define shared strategies to overcome and anticipate present and future bottlenecks. The third delivered specific technical workshops for SMEs and TNCs to discuss and agree upon specific quality standards. Diagram VIII.3 provides a visual representation of the life cycle of the business linkage programme.



Source: United Nations Conference on Trade and Development (UNCTAD), *Empretec Annual Report 2012*, Buenos Aires.

The transfer of methodologies and good practices to a local team hosted by the national development bank guaranteed the sustainability of the project beyond its duration. Another initiative led by UNCTAD was the organization of a study tour for representatives of the Argentine backward linkage project to meet peers from similar projects around the

world. One example was a tour to learn about the UNCTAD business linkage project (*Proyecto Vinculos*) in Recife, Brazil (2009) for three members of EMPRETEC. These tours allowed the Argentine programme to incorporate some best practices from other country programmes and to share lessons learned and new training methodologies developed specifically for the automotive sector by the team in Argentina (UNCTAD, 2013a). A large conference was also carried out at the premises of the national development bank in 2012 on the policies, good practices and effective mechanisms to develop and strengthen links between SMEs and TNCs, which attracted about 500 participants.

A 2012 survey on the impacts of the project found that 70% of participating SMEs had increased their sales, 60% had hired more workers, 70% had increased their investment and 90% had improved planning and purchasing arrangements with their TNC buyers (UNCTAD, 2013a).⁵

Based on the success of the pilot project in the automotive sector, the EMPRETEC Argentina Foundation expanded its activities to Tierra del Fuego. This southern province hosts the country's most prominent electronic manufacturing hub, which contributes 20% to gross domestic product (GDP). The electronics hub is responsible for producing the entire country's air conditioners and 83% of the country's monitors (UNCTAD, 2014). However, these large electronic goods producers used to import many components. A linkage programme was developed in 2011 by a group of national and regional stakeholders. The programme identified backward linkages between large TNCs and local SMEs for the provision of electronic components as a way of substituting imports (UNCTAD, 2014).

The main source of financing for the programme and one of the institutional drivers of the project was the Federal Investment Council (CFI). Other agencies involved were the Secretary of Economic and Fiscal Development of Tierra del Fuego, the EMPRETEC Argentina Foundation and UNCTAD. These institutions designed a two-stage programme. During the first stage, the local electronics industry was surveyed to identify imported components that could be substituted with domestic components. This stage, which ended in 2012, identified companies able to develop linkages in the short, medium and long term.

The programme incorporated 120 domestic electronic SME suppliers located in and around the Tierra del Fuego province, as well as

⁵ Before the project, 80% of the SMEs stated that their investments were mainly constrained by the uncertainty of the sales forecasts of their main clients.

enrolling all electronic producers in the special customs area in Ushuaia and Río Grande. Examples of established business linkages include local small enterprises that began supplying power cables and memory cards to large manufacturers. Another case was a joint venture between Megatech and Inarci, two local medium-sized enterprises that sought to integrate local suppliers in the production of air-conditioning remote controls for all makes of air conditioners (thereby reducing dependence on imports). This joint venture produced 1.5 million remote controls by the end of 2013. The recently started second phase aims to create further business linkages by using existing financial and technical support. In the long run, this project aims to create a critical mass of domestic SMEs that are able to produce more technically advanced components with more value added (UNCTAD, 2014).

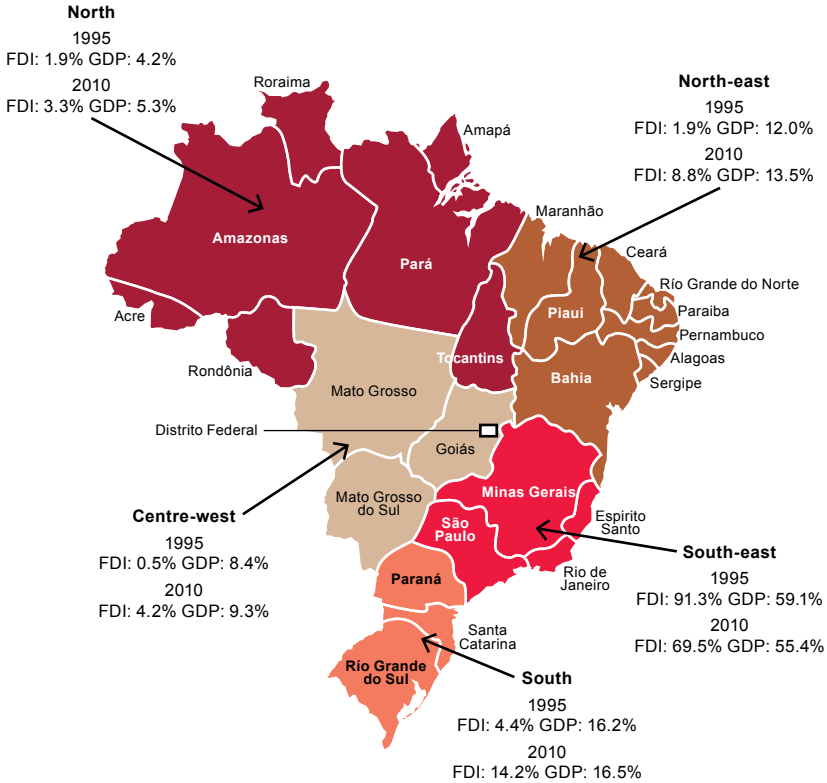
Overall, the positive outcomes of the Argentine business linkage programme illustrate the need for a critical mass of companies on both the supplier and the buyer sides. Another condition is the long-term commitment of all participants, since results are not normally seen in the short term. Consequently, a strict selection process of both SMEs and TNCs is needed when implementing a linkage programme. The relative success of the Argentine project can also be attributed to the implementation of a pilot phase, the development of an adequate institutional framework including sectoral chambers and associations, the buy-in of TNCs at the highest level and the adoption of a clear communication strategy to create trust among key project stakeholders.

2. Brazil

In 2008, SMEs accounted for 99% of all businesses and employed 64% of the national labour force, while contributing 21% to the country's GDP. Although Brazil has a critical mass of SMEs, they have been unable to successfully develop linkages with the country's TNCs owing to insufficient capacity (UNCTAD, 2010a).

Despite the large number of TNCs present in the country, there are few linkages between these firms and local SMEs. Over the last decade, around 13,000 TNCs entered the country to benefit from its large domestic market and its function as an export hub to other MERCOSUR countries. FDI is typically concentrated in the south-east of the country, while little foreign direct investment takes place in the north (see map VIII.1). Although the majority of TNC products are aimed at the domestic market, few have domestic SME suppliers. This is not only because of the limited capabilities of local SMEs, but also because most TNCs have not developed initiatives to promote linkages with these firms.

Map VIII.1
Brazil: regional distribution of FDI and GDP, 1995 and 2010
(Percentages)



Source: Prepared by the authors on the basis of United Nations Conference on Trade and Development (UNCTAD), *Integrating Developing Countries' SMEs into Global Value Chains*, Geneva, 2010; Brazilian Geographical and Statistical Institute (IBGE); State statistical offices; State secretariats, Superintendencies and Central Bank of Brazil [online] <http://www.bcb.gov.br/?CENSOCE>.

Numerous national agencies have developed a range of SME support programmes, business linkage programmes and innovation clusters. One example is the Local Production Arrangements (APL) programme, which was introduced in 2002 by the Brazilian Micro and Small Business Support Service (SEBRAE), which is also the Brazilian host of the UNCTAD EMPRETEC programme. APLs provide consultancy services to SMEs to help them overcome technical and management bottlenecks in relation to their cluster (UNCTAD, 2010a).

In 2004, SEBRAE launched another programme to assist SMEs in meeting international standards within the automobile and gas and oil

sectors. In the automobile sector, the programme promoted a network of automobile part suppliers to the Fiat factory in the state of Minas Gerais. It contributed to increasing the local supply of automobile parts by 71% from 90 suppliers, which generated 16,500 direct jobs. After the success of this programme, a similar one was developed with Daimler Chrysler. In the gas and oil sector, the programme identified 12 clusters located in 12 states. SEBRAE identified SMEs that could produce 80% of the supplies of lead firms in the areas of electronics, painting and assembly, specialized engineering and industrial maintenance (UNCTAD, 2010a). Standards included ISO 9000, ISO 14000, SA 8000 and OSHA 18001, which address areas such as project management and technology upgrading. SEBRAE provided training to help SMEs achieve international standards and their participation in business networks that include large companies such as Copesul, Petroquímica and Qualitex (UNCTAD, 2010a).

In 2005, the Brazilian government developed a new business linkage project (*Projeto Vinculos*) in the north-east of Brazil, in cooperation with UNCTAD, the German Agency for International Cooperation (GIZ) and multiple domestic public and private partners.⁶ Those partners included several SME support institutions at the state level (with their function in parenthesis): SEBRAE, the National Industrial Apprenticeship Service (SENAI) (professional education services in manufacturing), Social Service for Industry (SESI) (social services for manufacturing) and the Euvaldo Lodi Institute (IEL) (professional and technical upgrading programmes). Two leading business schools also participated in the project to promote links to academia and research: the Dom Cabral Foundation (FDC) and the Getulio Vargas Foundation (FGV). Another knowledge partner was the Ethos Institute, which specializes in corporate and social responsibility.

The project started with two surveys carried out by FDC and UNCTAD in 2006: one for TNCs and another for SMEs (see table VIII.2). The goal was to identify business linkage opportunities and current constraints, which informed the design of the project, as well as training and upgrading activities. In total 149 professionals, representing 25 TNCs and 105 SMEs, were interviewed about logistics and supply chain management. The surveys found that 86% of TNCs sold their products to Brazil's domestic market, while only 14% exported their products. Most TNCs required suppliers to meet their domestic demand requirements. Both TNCs and SMEs indicated that they had only weak linkages with

⁶ This project was conceived during the 2004 UNCTAD XI conference in São Paulo. Delegates from the public and private sector widely recognized the importance of promoting TNC-SME linkages and mandated UNCTAD to expand its work in this area (UNCTAD, 2010a).

a low to medium value added level. To upgrade the sourcing of SMEs, TNCs indicated that they required higher quality standards from SMEs, yet SMEs expressed difficulties in meeting these standards. Moreover, SMEs stated that TNCs provided mostly mentoring assistance rather than financial or technical assistance. Both sides suggested that policies were more favourable to TNCs than SMEs.

Table VIII.2
Transnational corporations and small and medium-sized enterprises in north-east Brazil: responses to the survey carried out by the Dom Cabral Foundation and the United Nations Conference on Trade and Development, 2006

Transnational corporations (TNCs)	Small and medium-sized enterprises (SMEs)
Major benefits of linkages with SMEs: lower costs (cheap local resources and labour, replacing imported material by locally produced inputs) and increased flexibility	Major benefits of linkages with TNCs: economic scale and new markets
Main challenges for linkages: SMEs need to meet customized and high-volume inputs, quality and safety standards, timely delivery, technology and service levels	Main challenges for linkages: Management capacity and deficit of management training, technological constraints and access to finance
Linkages are more prevalent in sectors with low entry barriers	Most linkages are formed in medium value added business sectors, where only some level of technological development is required. Linkages result from company initiatives rather than institutional support
TNC support for SMEs takes place in the form of training rather than financial assistance	Most SME-TNC linkages take the form of medium- to long-term arrangements, although there are some one-off and short-term contracts
There is good institutional support for, especially from Brazilian Development Bank (BNDES) and SEBRAE	Few SMEs received support from TNCs for technological upgrading
Positive overall business climate, with the exception of the <i>custo Brasil</i> (or the cost of doing business in Brazil), rigid labour laws and strong union rights	Overall business climate perceived as hampering potential linkages (bureaucracy, regulations, start-up time for business, for example.)

Source: United Nations Conference on Trade and Development (UNCTAD), *Integrating Developing Countries' SMEs into Global Value Chains*, Geneva, 2010.

The project organized several activities at the company, institutional and government levels. At the company level, the project managed SME-TNC matchmaking processes, undertook diagnostics for SMEs with regard to the demands of TNCs, built a TNC and SME consortia to organize employee training and worked with TNCs to deliver socially responsible linkage training. The participation of the private sector was essential for the project in terms of sharing international best practices, gaining credibility among businesses and developing the project's methodology. The main anchor companies included Alcoa, BASF, Bosch, Gerdau, Philips and Suzanna Chemicals (see map VIII.2).



Source: United Nations Conference on Trade and Development (UNCTAD), "Promotion of inter-firm cooperation in North-East of Brazil. Projeto Vínculos Final Report", Geneva, 2010.

At the institutional level, the project helped to upgrade State institutions to deliver linkage-specific training and upgrading services, coordinated interventions in the area of linkage promotion among institutions and organized workshops and forums to develop common linkage projects. At the government level, the project provided policy advice through publications and technical studies, disseminated international best practices in linkage policy through workshops and expert meetings on international platforms and aligned linkage and investment promotion with investment promotion agencies.

The project management office was established in Fortaleza, from where the project director and steering committee made all funding and management decisions. As the project unfolded, local institutions were trained to implement the project effectively in different areas. The office also planned and monitored the following activities: feasibility

studies of linkage subprojects (in each area), partnerships with TNCs and institutions, planning of activities and management structure, mobilization of SMEs showing potential for participating in the project, planning of linkage promotion, project implementation and the evaluation and transfer of executive functions to local management.

In 2007, an advisory board was inaugurated consisting of representatives of the Ministry of Development, Industry and Commerce and chief executive officers (CEOs) of some of the country's leading TNCs. It contributed to raising awareness of the benefits of developing and strengthening business linkages and provided strategic guidance to project members. The project also provided the beneficiaries with international exposure and an international forum to exchange views and experiences. UNCTAD hosted several international meetings that brought together stakeholders of different business linkage programmes from around the world, including Argentina, Brazil, Malaysia, Mexico, Mozambique, Peru, South Africa, Tanzania and Uganda. Leading TNCs provided key contributions to these meetings as they were able to network, share experiences and develop new partnerships (see table VIII.3).

Table VIII.3
North-eastern states in Brazil: participation of transnational corporations (TNCs) in *Projeto Vínculos*, 2006-2010
(Number)

Indicator	Bahia	Ceará	Manaus	Pernambuco	São Bernardo do Campo	Total
Proposals to TNCs	22	15	3	20	4	64
Expression of interest signed	8	7	1	12	1	29
TNC needs identified	8	7	1	5	1	22
Assessment questionnaire	8	7	1	5	1	22
TNC on board	8	7	1	5	1	22
Memorandum of understanding or agreement signed	8	7	1	5	1	22
Liaison officer appointed	8	7	1	5	1	22
Financial commitment	8	7	1	5	1	22

Source: United Nations Conference on Trade and Development (UNCTAD), "Promotion of inter-firm cooperation in North-East of Brazil. *Projeto Vínculos* Final Report", Geneva, 2010.

The linkage project benefitted both SMEs and TNCs. In the state of Bahia, its qualification programmes included 130 SMEs and 2,500 employees (see table VIII.4). Several TNCs have been able to strengthen their local SME supplier networks, which has allowed local SMEs to get a foothold in GVCs. In the majority of cases, TNCs have contributed to around 30% of the total cost of upgrading local SMEs.

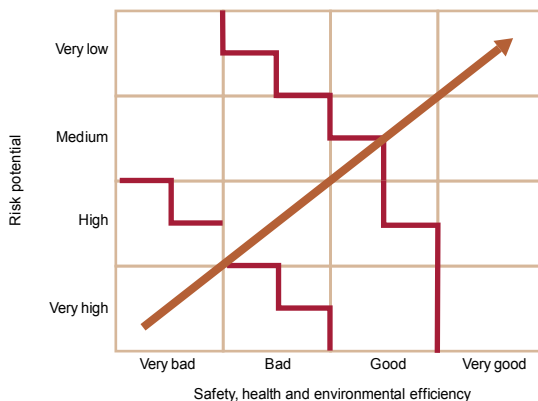
Table VIII.4
North-eastern states in Brazil: participation of small and medium-sized enterprises (SMEs) in *Projeto Vinculos*, 2006-2010
(Number)

Indicator	Bahia	Ceará	Manaus	Pernambuco	São Bernardo do Campo	Total
SMEs identified and selected	200	70	10	75	6	361
SMEs on board	130	50	10	40	6	236
Agreement	130	50	10	40	6	236
Health check completed	130	50	10	40	6	236
Training delivered	130	50	10	40	6	233
Financial contributions (dollars)	640 000	245 000	175 000	225 000	-	1 285 000

Source: United Nations Conference on Trade and Development (UNCTAD), "Promotion of inter-firm cooperation in North-East of Brazil. *Projeto Vinculos* Final Report", Geneva, 2010.

As a result of the project, BASF incorporated the *Projeto Vinculos* methodology into a nationwide programme called the BASF Value Chain Development Programme in order to upgrade all of its suppliers (UNCTAD, 2010c). In particular, BASF adopted an evaluation and qualification system for its suppliers, which included a performance evaluation of each supplier to ensure that high standards were being met. The qualification system was implemented to improve the delivery of products in line with stringent profitability, quality, health and safety standards and to secure a commitment to a low environmental impact. All suppliers, including SMEs and larger companies, were classified according to a risk matrix: a semi-quantitative risk assessment tool aimed at the early identification of hazards in all the operations performed along the value chain (see diagram VIII.4).

Diagram VIII.4
Risk matrix adopted by the BASF Value Chain Development Programme



Source: United Nations Conference on Trade and Development (UNCTAD), "Promotion of inter-firm cooperation in North-East of Brazil. *Projeto Vinculos* Final Report", Geneva, 2010.

On the SME side, the substantive results include an increase in sales and exports, an expansion of the client base, access to information, technology and management processes, coaching and technical advice, improved competitiveness, product standards and managerial skills (see box VIII.1).

Box VIII.1

Feedback from small and medium-sized enterprises regarding their participation in the *Projeto Vínculos* business linkage project in Brazil

Elisabete Ambrosio, Chief Executive Officer of Plásticos Manaus, highlighted the project's achievements as follows: "*Projeto Vínculos* helped us to achieve the objective of becoming ISO 14001 certified, thanks to the project's methodology and quality of the team assisting us in reaching this ambitious goal. The certification process is very challenging for SMEs in the region, as the investments needed are high and access to credit is limited. Without *Projeto Vínculos* we would not have achieved these improvements. The project gave us the confidence and the financial support we needed."

Mauro Colombarolli, Director of Alfatec, an SME with 65 employees in Manaus that produces plastics and materials for packaging, described the experience as follows: "We had the wrong idea about the ISO 14001 norm. We thought that we were not prepared for it and that it would exceed our capacity as we were constructing a new production site. However, the implementation of these practices not only reduced consumption and pollution, it also led to a reorganization of our procedures. We saved a lot of money putting up our new facilities in accordance with the norm. We are convinced that the investments will pay off in the long term. Most large companies impose standards without supporting their implementation. In this case, there was a different attitude towards local suppliers. The open-door policy helped us as much as exchanging experiences with our counterparts."

Kelly Soraia, one of the two directors and owners of Ledquadros, a small enterprise with 20 employees which assembles electric panels, commented the following at the end of the project: "So much changed during the last one and a half years. We changed our vision of our business, began to look inside our organization and restructured our processes at a surprisingly low cost. Instead of paying expensive consultants, we learned from other supplier companies with similar challenges and from the know-how of the anchor companies involved in the programme." Before its participation in the project, Ledquadros operated without an environmental licence. Through a partnership with the Bahian Secretary for the Environment, the licensing process was facilitated for various SMEs, giving security to suppliers and clients: "Generally, we are more confident when we offer our services to other large companies. Our participation in the programme and the changes we made helped boost our company's credibility."

Source: United Nations Conference on Trade and Development (UNCTAD), "Promotion of inter-firm cooperation in North-East of Brazil. *Projeto Vínculos* Final Report", Geneva, 2010.

Two key factors contributed to the success of the linkage project in Brazil. The first was the active participation of financial institutions and their credit facilities for SME upgrading. The second was the key role of TNCs and private-sector programme leaders who understood the needs of the TNCs.

Recently, SEBRAE extended the linkage project to several states in the north-east, as well as the rest of Brazil, and changed its name to the National Programme for Production Linkages (*Programa Nacional de Encadeamento Produtivo*). The close collaboration with specialized agencies at the state level has helped to ensure the long-term sustainability of the project and its subsequent expansion in the five main regions (with states in parenthesis): north (Amazonas, Tocantins and Roraima); north-east (Alagoas, Ceará, Maranhão, Rio Grande do Norte and Sergipe); centre-west (Mato Grosso); south-east (São Paulo); and south (Santa Catarina). The expansion consolidated the project inside the SEBRAE system and strengthened its collaboration with other national partners: the Euvaldo Lodi Institute (IEL), the National Industrial Apprenticeship Service (SENAI), Social Service for Industry (SESI) and national development banks.

The case of Brazil illustrates that business linkages need to be addressed not only from the private sector perspective, but also from the policy perspective. This can be done by organizing high-level awareness-raising and discussion workshops and seminars, as well as conducting policy forums with government ministries, policymakers and company CEOs. Other preconditions for building productive capacities and facilitating business linkages include a favourable business environment and an attractive investment climate. The Brazil case also shows that the best way to ensure TNC participation is to take a business-to-business approach, with a focus on the ideas and requirements of TNCs regarding their SME suppliers. Also, it is necessary to include TNCs in the supplier selection process in order to ensure beneficial outcomes for all. Small suppliers and large purchasers need to have common goals, and their participation should be on a voluntary basis.

Finally, the experience of Brazil shows that a business linkage programme needs to change over time and adapt to local conditions and development needs. Linkage programmes should be designed to strengthen the absorptive capacities of domestic enterprises, and they should evolve dynamically to address higher value added products and services and constitute a launching pad for SME internationalization. In Brazil, SEBRAE adapted the classical linkage programme with support for local SMEs to a more complex programme that also addresses aspects of value chain mapping and cluster development. Both aspects can enhance the effectiveness of linkage promotion programmes.

3. Mexico

Mexico has a dense network of TNCs and SMEs. In 2012, there were about 2,600 TNCs in Mexico, of which 87% were foreign firms. Of those foreign firms, 54% were from the United States (Carillo, 2013). In 2014, the country had 5.7 million businesses of which 95% were micro, 4% were small, 0.8% were medium-sized and 0.2% were large, according to the national economic census (INEGI, 2014). This structure has changed little over the last decade, based on the 2004 and 2009 censuses.

Business linkage programmes have a relatively long history in the country. In the 1970s, an information exchange system (called *Bolsas de Subcontratación*) was developed by the public and private sectors to disseminate linkage opportunities between TNCs and local SMEs. The project aimed to increase information flows between foreign TNCs and local SMEs, providing possible linkage opportunities between the two. The system kept a list of SMEs, which could be accessed by TNCs who were looking for suppliers. The system was launched in seven locations: Aguascalientes, the Federal District, Guadalajara, Monterrey, Pachuca, Puebla and Querétaro. Only three were successful (Guadalajara, Monterrey and Pachuca), in part because they provided additional support services that targeted specific sectors.

Another recurrent initiative to promote business linkages was the hosting of matchmaking events between buyers and suppliers, organized by the Ministry of Economic Affairs. These events provided opportunities for TNCs to find potential local suppliers and allowed SMEs to promote their products to TNCs. Annual meetings were also organized (*Semana Pyme*) to provide a forum for sharing information between participants and to create a database of suppliers, although the database quickly became outdated and inaccurate.

In 2007, the Ministry of Economic Affairs launched an entrepreneurship programme called *Mexico Emprende*, which aimed to improve the competitiveness of SMEs. One of the initiatives under this programme was the creation of supplier linkage centres, called *Centros de Articulación Productiva* (CAP) to connect SMEs to TNCs. The CAPs organized matchmaking events that helped TNCs identify local suppliers, promoted the latter and assisted them in winning contracts. CAPs also organized annual SME meetings that promoted potential suppliers. Procurement events were held on a regular basis for the automotive and electronics industries and the public sector.

Both of Mexico's leading manufacturing sectors (namely, electronics and automobiles) have examples of successful business linkage initiatives. In the electronics sector, leading TNCs, including contract manufacturing

services (CMSs) and original equipment manufacturers (OEMs), established an electronics supplier development centre, called the *Cadena Productiva de la Electrónica* (CADELEC), in Guadalajara in 1998. This centre was launched in collaboration with the Electronics Business Association (CANIETE) and the United Nations Development Programme (UNDP). It aimed to develop an integrated supply chain connecting local SMEs with foreign TNCs. Managers from the TNCs made up the board of directors. Its funding came from the above partners, as well as the National Foundation of Innovation and Technological Transfer to SMEs (FUNTEC) and the state of Jalisco. It generated and publicized ideas and information regarding grants, industry incentives, quality of infrastructure, the business industry and investments. Finally, it organized media events and the Mexitronica exhibition, which helped to attract new investment and promote the local electronics cluster in Guadalajara. Overall, this project was successful in establishing a database of domestic electronic suppliers. In 2005, the budget doubled to US\$ 7 million over the previous year. This allowed the centre to provide support to each supplier in the programme.

The programme included the following aspects:

- Identification of existing or potential suppliers through reverse engineering methods;
- Diagnostic assessments in the area of manufacturing, quality, material logistics, environment, information technologies, marketing, research and development, human capital, finance, strategic planning and business organization;
- Formulation of recommendations on how to improve company operations, discussed by business counsellors and company representatives;
- Implementation of upgrading measures, mainly oriented towards international quality certification such as the ISO standards;
- Preparation of a follow-up agenda for the business to be able to work on continuous innovation procedures;
- Registration and documentation of all activities in a database to be used in the future for other businesses.

The automotive industry is one of the largest industries in the country and includes many foreign automobile makers. TNCs have different degrees of business linkages with domestic SME suppliers. A good example is Volkswagen, which was the second largest car producer after Nissan in 2005, with an annual production of about 301,000 units. Volkswagen's success in the development of a domestic supplier network stems from the fact that it required its first-tier foreign suppliers to develop

linkages with domestic firms right from the start of its production in Puebla in 1962. This pushed first-tier foreign suppliers to train local suppliers and to develop Volkswagen's industrial park.

The Mexican example shows that local SMEs can successfully upgrade when they receive support from public and private partnerships. Cooperation between institutions and funding schemes can assist SMEs in acquiring new skills and upgrading their technology. SME clusters and business associations also promoted long-term FDI, multitiered supplier networks, collaboration between SMEs for collective learning and training. Clusters therefore present an effective method for assisting local SMEs to upgrade into a GVC and share valuable information (UNCTAD, 2010a).

The Mexican experience also illustrates that the development of business linkages between TNCs and SMEs depends on a comprehensive range of services. These include advice on contractual arrangements, assistance to small firms in preparing business proposals, the creation of strategic alliances with firms, help with special development projects, organization of joint bids and advice on contractual arrangements. When support is lacking at the national level, it is important to focus the programme at the state or even regional level in order to provide the required strategies that are lacking at the national level (UNCTAD, 2010a).

D. Concluding remarks

Business linkage programmes can be an effective tool for promoting inclusive and sustainable value chains. This chapter illustrates the potential of such programmes in successfully upgrading SMEs and ensuring their inclusion in TNC value chains. The case studies show that each business linkage programme is unique and reflects a country's individual assets and viable sectors. However, all such programmes are governed by similar objectives and operating principles.

Business linkages must be market-driven and sustainable, which calls for a critical mass of both buyers and suppliers. In sectors with a limited number of lead firms, SMEs can find themselves vulnerable to unfair contractual conditions or become overly dependent on a single buyer. Business development programmes should focus on upgrading SMEs to create long-term productive linkages. Programmes to foster entrepreneurship, such as the EMPRETEC programme delivered by UNCTAD, encourage a culture of change and a positive mind set among local suppliers, seeking to build both skills and motivation. Cluster development, supply chain mapping and networking of firms can also facilitate the development of linkages with larger groups of firms, thus generating economies of scale.

Pilot projects can help in establishing lasting linkages between groups of SMEs and TNCs. If a pilot programme is successful, it may be rolled out at the national level and replicated in other sectors. A careful selection of potential SME suppliers is essential for gaining the confidence and securing the participation of large purchasing companies. Only those SMEs that meet the requirements or demonstrate a willingness to develop should be selected to participate in linkage programmes. Strengthening public-private partnerships is also important, as is the inclusion of industry needs in policy formulation. Business organizations such as chambers of commerce, industry associations and business forums should take the lead in increasing cooperation among large firms to promote the standardization of safety guidelines, environmental requirements and other criteria pertaining to suppliers.

The development of successful business linkages requires a long-term operational and policy perspective. Policies to force TNCs to join linkage programmes are counterproductive and usually achieve only short-term gains. Instead, a systemic policy approach to linkage-building is necessary. This includes the attraction of strategic foreign direct investment and a strengthening of the absorptive capacities and competitiveness of domestic enterprises. Improving the general investment environment is also important. The regulatory and institutional environment in which firms operate has an impact on their ability to initiate productivity improvements, whether through the optimal allocation of inputs, technology transfers or the ability to generate spillovers. Finally, it is necessary to raise awareness and improve dialogue among different stakeholders at both the national and local levels, including municipalities and private-sector stakeholders.

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Chapter IX

Supplier development programmes in Costa Rica and El Salvador

Emmanuel Hess¹

Summary

Costa Rica and El Salvador are small open economies in the heart of Central America, which have each adopted different types of export specialization. Costa Rica has transformed its export basket from agricultural products to medium- and high-technology manufactures and services by attracting foreign direct investment (FDI) to these sectors. El Salvador, for its part, has specialized in low- and some medium-technology manufactures and some services. In both countries, large (export) companies have few backward linkages with small and medium-sized enterprises (SMEs). Each country has adopted small supplier development programmes to promote such linkages, albeit with a different focus. Costa Rica promotes backward linkages mainly with foreign companies in the export sector, whereas El Salvador focuses on enhancing the competitiveness of existing business linkages between small and large indigenous firms in its local market. Despite the achievements of each programme in terms of its proven methodological approaches, intellectual capital, know-how and information technology (IT) resources, both face challenges to increase their impact.

¹ The author is grateful to Rolando Dobles of Foreign Trade Corporation of Costa Rica (PROCOMER) in Costa Rica and Luis Armando Castro of the Chamber of Commerce and Industry in El Salvador for assistance in setting up interviews, as well as the many people and institutions in the public and private sectors of these two countries who participated in the interviews.

Introduction

Costa Rica is a small, trade-oriented, upper-middle-income economy in Central America. In the absence of natural resources, the country has based its export development on medium- and high-technology manufactures and services that embody an increasingly high level of human capital. This result was not a coincidence: more than 60 years ago, Costa Rica abolished its military forces and reallocated these resources to educational and social security uses. The long-standing political, economic and social stability have also played a crucial role in the development of Costa Rica, along with its environmental awareness and strategic location in the centre of the Americas.² The country has been leveraging its social investment to attract foreign direct investment (FDI), which has been the main driver for upgrading the export sector over the last few decades.

After initial success in attracting FDI and exporting non-traditional agricultural products in the 1980s, Costa Rica transformed itself into a high-technology producer. Foreign firms, all of which were established under the free trade zone regime, helped the country move up the value chain by installing engineering, design and decision-making processes in both manufacturing and service activities. In this regard, the establishment of the Intel assembly and manufacturing facility in the mid-1990s played a major role in endorsing the country as an investment destination for medium- and high-technology products.³ Tourism has also played an important role in the service exports of Costa Rica. Mainly North American and European visitors are attracted by the combination of its beaches, tropical rainforest and volcanoes, political stability and strategic location, in addition to the cultural affinity of the population with foreign visitors.

Multiple public and private institutions have also played a central role in attracting FDI and promoting exports. Most trade promotion efforts are undertaken by PROCOMER, Costa Rica's export promotion agency. The entity in charge of attracting FDI and helping improve the investment climate in the country is the Costa Rican Investment Promotion Agency (CINDE), a local non-governmental organization (NGO) that has been operating for more than 30 years and has been recognized as one of the top investment promotion agencies around the world.⁴ The Costa Rican Institute of Tourism conducts all of the country's promotion efforts abroad and supports its local entrepreneurial base through different outreach programmes established for this purpose.

² The country is in one of the same time zones as the United States (central standard time), and several daily flights connect its capital San José to Miami in only two and a half hours.

³ In 2014, Intel closed its manufacturing facility in Costa Rica when it reorganized its international production network, leaving only a diversified services facility in the country.

⁴ CINDE ranked among the top 10 best-practice investment promotion agencies worldwide, according to the *Global Investment Promotion Benchmarking 2009* of the Investment Climate Advisory Service of the World Bank Group (World Bank, 2009).

El Salvador is the smallest country in Central America in terms of land surface. Nonetheless, it has the highest population density in the region, with 6.3 million inhabitants. It is the only country in the Central American subregion with only one coastline (the Pacific). Like Costa Rica, it is in one of the same time zones as the United States (central standard time) and has several direct air connections to that nation. This is due, in part, to the presence of 2.5 million Salvadorian migrants living in the United States, according to the International Organization for Migration (IOM).⁵ The country has suffered from social turmoil, including a civil war between 1979 and 1992, and domestic drug-related violence. The war adversely affected the economy and led to large-scale emigration. Although peace has been re-established, domestic (mainly drug-related) crime currently remains a major challenge and has a strong negative impact on the business climate.⁶

El Salvador also succeeded in upgrading its export basket from agricultural goods to manufacturing and services, albeit with a lower technology content than in Costa Rica. Privatization in different economic sectors played an important role in attracting FDI. These sectors include banking, electricity generation and distribution, pension funds and telecommunications, which have all been opened for private investment since the entry into force of the Central American-Dominican Republic Free Trade Agreement (CAFTA-DR) in 2004. Another driver of FDI inflows is the efficiency-seeking export sectors, including aerospace, agribusiness, back-office services, footwear manufacturing, textiles and clothing, health services logistics and infrastructure, medical devices and tourism. While the Salvadorian tourism board coordinates and executes promotion activities within its industry, all trade promotion and investment attraction efforts are channelled through a single public agency called the Export and Investment Promotion Agency of El Salvador (PROESA). This organization, created in 2000, also contributes to building the country's image and improving the business climate in general.

A common denominator of both economies is the low participation of small and medium-sized enterprises (SMEs) in the supplier base of large domestic and foreign companies. This is a concern for both governments and societies, as SMEs account for the bulk of employment. Links to large firms would provide an opportunity for SMEs to benefit from technology and knowledge transfers, which would help them improve productivity and labour conditions. Without these linkages, the large firms risk becoming islands of excellence without any spillovers to the rest of the

⁵ As indicated on the website of the International Organization for Migration [online] <http://www.iom.int/cms/en/sites/iom/home/where-we-work/americas/central-and-north-america-and-th/el-salvador.html>.

⁶ The murder rate for 2014 was estimated at 61.6 per 100,000 inhabitants, according to the leading local newspaper *La Prensa Gráfica* [online] <http://www.laprensagrafica.com/2015/01/11/el-salvador-con-menos-homicidios-en-c-a-pero-con-tendencia-alcista>.

economy, which could also deepen labour income differences between large and small firms and income inequality in general.

Both countries have adopted supplier development programmes (SDPs) to promote business linkages between the two groups of firms. This chapter reviews the experience of these SDPs. Section A provides more information on the economic background of Costa Rica and El Salvador, while section B describes the context of the SDPs. In section C, the programmes of the two countries are compared in terms of institutional support, goals, scope, methodology, achievements and future challenges. Section D synthesizes the main commonalities and differences between the two experiences. The experience of some suppliers SMEs and lead firms is described in section E. The final section concludes and provides some recommendations to enhance the impact of both programmes in the future.

A. Background

Costa Rica, with a population of 4.9 million, reached a per capita income level in nominal and purchasing power parity (PPP) terms of US\$ 10,528 and US\$ 14,914, respectively, in 2014.⁷ Its gross domestic product (GDP) has grown 3.4% annually, on average, in the last five years. In 2013, the country exported a total of 4,463 products. The leading high-technology export sector is medical devices manufactures, which now account for more than 20% of exports. Multinational corporations (MNCs) accounted for 53% of the total value of exports in that year. Local industries also added several types of products, such as metal mechanic, plastic and food products, to the country's traditional export basket, which is otherwise mostly composed of bananas, coffee, and pineapples (see table IX.1).

Table IX.1
Costa Rica: exports by sector and trade regime, 2014
(Millions of dollars)

Type of product	Trade regime			Total
	Definitive	Active processing	Free trade zone	
Poultry and fish	283.5	1.4	81.5	366.5
Agricultural	2 515.3	0.0	59.1	2 574.4
Manufacturing	2 556.6	156.0	5 651.0	8 363.6
Total exports	5 355.4	157.4	5 791.6	11 304.5

Source: Foreign Trade Corporation of Costa Rica (PROCOMER), *Estadísticas de Comercio Exterior de Costa Rica, 2014*, San José, June 2015.

Note: The definitive regime covers products exported for consumption abroad; the active processing regime covers the local processing and subsequent export of imported goods; and the free trade zone regime is a tax incentive regime under which investment companies locate in free trade zone parks to process duty-free inputs and then export the final products.

⁷ Data are from International Monetary Fund (IMF), World Economic Database [online], October 2014.

The inflows of more than 2.5 million tourists in 2014 (representing a 4.1% increase from the 2013 level) gave a boost to both large firms and SMEs in that industry. The turnover of the tourism business amounted to US\$ 2.6 billion in 2014.⁸

The per capita GDP of El Salvador in 2014 was estimated at US\$ 4,796 in nominal terms and US\$ 9,533 in PPP terms.⁹ The World Bank thus considers it a lower-income economy and its GDP has grown by less than 1% annually in the last five years. Nevertheless, the country has had little inflation, in part because it adopted the United States dollar as its local currency in 2001. In addition to traditional products such as coffee, seafood and sugar, the country also exports products manufactured in several free trade zone parks (referred to as drawback exports in table IX.2).

Table IX.2
El Salvador: annual exports, 2011-2014
(Millions of dollars)

	2011	2012	2013	2014
Traditional exports	597.3	467.2	424.9	288.4
Non-traditional exports	3 642.3	3 765.9	3 908	3 960.5
Drawback exports	1 068.6	1 106.0	1 158.2	1 024.0
Total exports	5 308.2	5 339.1	5 491.1	5 272.7

Source: Central Reserve Bank of El Salvador (BCR), "Cuadros estadísticos", 2014.

Note: Traditional exports include conventional low value added products or commodities, such as fresh produce, while non-traditional exports incorporate higher value added and differentiated goods, such as textiles and electronic components; drawback or "maquiladora" exports are produced by local assembly plants operating under special incentive regimes, which import almost all of their inputs and export all of their final goods.

For the time being, the tourism industry in El Salvador is still recovering from a sharp drop in tourist arrivals in 2009, after an all-time peak in 2008. In 2014, it received about 2 million tourists attracted by the beaches and other ecological and archaeological spots. The turnover of this industry in 2014 was US\$ 1.112 billion, which represents a 24% increase from 2013. Most tourists come from neighbouring Central American countries (56%), while 36% are from North America.¹⁰

⁸ As reported in a press release submitted through the website of the Presidency of Costa Rica [online] <http://presidencia.go.cr/prensa/comunicados/223-cifras-turisticas-respaldan-posicionamiento-de-costa-rica-como-destino-turistico/>.

⁹ Data are from International Monetary Fund (IMF), World Economic Database [online], October 2014.

¹⁰ For more information, see *La Prensa Gráfica* [online] <http://www.laprensagrafica.com/2014/11/27/turismo-dejaria-en-2014-1112-millones-en-ingresos>.

B. The creation of the supplier development programmes in Costa Rica and El Salvador

Costa Rica has a relatively long history of programmes oriented towards the development of small and medium-sized enterprises (SMEs) through business linkages with large firms. The first efforts in this direction were undertaken by the investment promotion agency CINDE some years after its creation in 1982. Once a critical mass of foreign companies was based in Costa Rica, CINDE initiated a strategy to foster business linkages in response to requests from foreign investors. However, when the CINDE budget was cut in the 1990s, the agency concentrated on its core business of investment promotion and abandoned the promotion of business linkages. At that time, most foreign companies operating under the free trade zone regime relied on drawback manufacturing of low-technology goods, including basic medical devices, clothing and textiles.

In parallel, the private sector launched a programme in 1994 to foster entrepreneurial linkages (called the PROFOVE initiative), through the Chamber of Industries of Costa Rica. This programme used trade data from companies operating in the free trade zones to identify imported products that local companies could substitute. This exercise provided a large list of potential opportunities for import substitution, most of which did not materialize as there was no institutional platform to follow up on them. Nevertheless, this experience provided some first lessons and created the basis for fostering business linkages between native and FDI firms. In the same year, a similar project entitled Proyecto MIL was launched to improve the performance of local firms.

In 1999, a new project financed by the Inter-American Development Bank (IDB) was implemented. This project sought to develop suppliers for high-technology multinational companies to increase the local value added content of their exports and to improve the competitiveness of native SMEs. The project had three main pillars: a pilot procurement programme, the creation of an integrated information system and the formation of a national office for supplier development (Costa Rica Provee). This project's cost was US\$ 1.5 million, of which US\$ 900,000 was financed by IDB. The SDP has operated under PROCOMER since 2003, but it was only in 2005 that a special department and budget were created for the programme.

In El Salvador, the supplier development programme was an initiative of the United Nations Development Programme (UNDP) aimed at developing SMEs through business linkages. Its methodology came from Mexico, where UNDP developed an analogous programme after the implementation of the North American Free Trade Agreement (NAFTA) in 1994 (PDP El Salvador, 2014). This agreement, which improved market

access and conditions for FDI, led to the massive entry of MNCs into Mexico. These firms established large-scale drawback operations (called *maquiladoras*), mostly within the automotive and textile industries. Local stakeholders in Mexico saw an opportunity for local SME suppliers to benefit from the presence of these foreign investors. These stakeholders were the national development bank (Nacional Financiera (NAFIN)), the National Chamber of Manufacturing Industries (CANACINTRA) and the Secretariat of Economic Affairs.

From 1998 to 2002, UNDP successfully implemented its first SDP in Mexico. With financial support from NAFIN, it first studied best practices in business linkage programmes around the world. Based on these findings, UNDP designed a programme to match potential Mexican suppliers with the demand from Mexican affiliates of United States manufacturing companies. It also developed a methodology and an integrated information platform to develop business linkage opportunities and trace these linkages over time. Subsequently, it began to implement the programme with support from CANACINTRA and the Secretariat of Economic Affairs. For this purpose, it certified more than 160 local SDP consultants. Towards the end of this first phase, UNDP developed a supplier development manual based on its experiences. The Mexican SDP (Programa de Desarrollo de Proveedores) was successful in establishing multiple MNC-SME linkages involving large firms such as Bosch, Nike and Volkswagen.

In El Salvador, UNDP recognized that its SDP model could also support local business development. To promote the initiative, UNDP organized a field visit for several Salvadorian public and private stakeholders to tour Mexican MNCs and SMEs that participated in the SDP. They were impressed by this experience and felt it could also work in their own country. In 2009, UNDP started to adapt the SDP based on the Mexican experience to El Salvador's characteristics, including the smaller scale of its businesses and importance of native industries, such as the agricultural sector.

In 2010, UNDP officially launched its SDP in El Salvador. The original local stakeholders of the SDP included the Chamber of Commerce and Industry, the Salvadorian Association of Manufacturers and the Export and Investment Promotion Agency of El Salvador (PROESA). In that same year, the SDP received US\$ 1 million in support from the IDB Multilateral Investment Fund, together with a US\$ 633,000 grant from the UNDP office in El Salvador (De Groote, 2014). The SDP was managed from the Chamber of Commerce and Industry, which is the main institutional counterpart of UNDP. The IDB support had four components: (i) adaptation of methodology to local conditions; (ii) training for consultants in the

SDP methodology; (iii) delivery of the business development services by trained consultants to the companies; and (iv) monitoring of activities and evaluation of the programme results. Additional funding from the United States Agency for International Development (USAID) in 2012 also helped to finance the programme.

C. Typology of the supplier development programmes in Costa Rica and El Salvador

1. Institutional support

Different public and private institutions are in charge of the SDPs in Costa Rica and El Salvador, which reflects the ultimate goals of each programme. In Costa Rica, SDPs have always been organized under the leadership of the institutions responsible for FDI and trade. Their main goal is to improve the linkages between multinational export firms and local SMEs.¹¹ In El Salvador, the SDP has been hosted by the Chamber of Commerce and Industry, whose membership includes most large and small firms. The Ministry of Economic Affairs has recently expressed interest in upgrading the programme and building internal capacities to manage a programme under its own umbrella. In this country, the SDP mainly aims to include more SMEs in the supplier networks of large firms, which do not necessarily export.

(a) Costa Rica

In Costa Rica, the Ministry of Foreign Trade was created in 1996 in order to promote Costa Rica's insertion in the global economy by creating new export opportunities, supporting the expansion, diversification and sophistication of the export basket and attracting FDI. The ministry coordinates all strategies and programmes related to exports and FDI. It has established a public-private partnership with CINDE, the non-governmental investment promotion agency. The ministry also oversees the country's export promotion agency (PROCOMER), chaired by the Minister of Foreign Trade.¹²

¹¹ In Costa Rica, the coordination of SME development activities has typically fallen under the scope of the Ministry of Economic Affairs, Industry and Commerce, which has implemented sporadic business linkage initiatives over the years. For example, from 2002 to 2006, this ministry mapped the demand of goods by tourism companies in the province of Guanacaste. Over time, however, the Ministry of Foreign Trade has emerged as the main actor providing political backing and overall coordination of supplier development efforts.

¹² PROCOMER actively promotes foreign trade through two groups of companies: multinational firms located in free trade zones with special incentives and local small, medium-sized and large companies without special incentives.

PROCOMER has a mandate to deepen and diversify production linkages. For this purpose, it created the SDP Costa Rica Provee in 2003, which became a fully funded department of this entity in 2005. From 2010 to 2015, the SDP had an annual average budget of US\$ 270,000, according to PROCOMER. Because the SDP can also serve to improve the investment climate for foreign companies in the country, the role of CINDE in the SDP has grown. Under a special arrangement since 2010, PROCOMER has made annual budgetary transfers to CINDE to support the execution of specialized investment attraction efforts.

The institutional setting of the SDP was further strengthened in 2010 when the government authorities launched the Commission for Export Linkages, in an attempt to incorporate more business development agents in support of PROCOMER. Its mission was to strengthen and develop local linkages by promoting institutional coordination and alignment under the National Plan for Linkages. The Commission includes the Ministry of Foreign Trade, the Ministry of Economic Affairs, Industry and Commerce, the Ministry of Science and Technology, CINDE, the Costa Rican Chamber of Exporters (CADEXCO), the Chamber of Industries of Costa Rica (CICR), the Free Trade Zone Association and the National Council for Scientific and Technological Research (CONICIT). The Commission was recently renamed the Commission for Local Productive Linkages.

(b) El Salvador

Since its inception, the SDP has been embedded within the Chamber of Commerce and Industry (CCIES). This chamber was created in 1915 and has a large and diverse constituency of firms in a wide range of sectors throughout the country, of which 87% are micro and small enterprises. The chamber has proven to be self-sustainable, and its political muscle and visibility benefit the SDP. An agreement was reached with the local UNDP office for the chamber to host the SDP when it was launched. In addition to the SDP, CCIES organizes specialized business training, customized seminars, trade missions and fairs for its members.

The SDP staff at CCIES includes a programme coordinator, a support specialist to the coordinator, an information technology (IT) specialist¹³ and an administrative officer, who are all employed directly by the chamber. This entity also provides legal and accounting support to the programme. In addition, the programme has a steering committee responsible for providing guidance and facilitating and supporting its management. The committee includes representatives of CCIES, the Chamber of Agriculture and Agribusiness (CAMAGRO), the Salvadorian Manufacturing Association (ASI), the Ministry of Economic Affairs and UNDP.

¹³ The IT specialist was transferred to the UNDP premises.

As a result of the success and visibility of the SDP project, the Ministry of Economic Affairs requested that UNDP expand the SDP and help transfer the SDP methodology to its production promotion staff. This expansion includes the incorporation of micro-enterprises in the supplier base to further the UNDP goal of promoting an inclusive economy. At the national level, the Ministry of Economic Affairs facilitates, coordinates and promotes all policies relating to trade and industry. Under its current production promotion strategy, the SDP unit will be an executing entity associated with the ministry. The ministry is also striving to align its related autonomous executing entities with the SDP, including the Salvadorian Production Development Fund (FONDEPRO), the National Commission for Micro and Small Enterprises (CONAMYPE) and the National Development Bank (BANDESAL). FONDEPRO, which is executed through the vice ministry, subsidizes 60% to 90% of the total cost of a project related to micro and small enterprises. So far it has provided support for three SDP chains. CONAMYPE executes all national policies on micro and small enterprises and has an advisory body comprising a wide range of stakeholders that support SMEs. Finally, BANDESAL is a public bank with soft financing for business projects.

The SDP initially received financial support from UNDP and IDB, and in 2012 it also received a grant from USAID. Currently, the CCIES staff are approaching country donors through their embassies in San Salvador. The Salvadorian UNDP branch still maintains an SDP office with experienced staff, including a former executive director and substantive IT support. This team has exported its adapted SDP model to other countries in the Caribbean, South America and even Africa.

2. Goals and scope

(a) Costa Rica

The SDP has both investment and trade objectives, which reflect the respective institutions dealing with each issue: CINDE and PROCOMER. For CINDE, the main goals of this programme are to improve the local investment climate and to attract and retain FDI in the country. For PROCOMER, the programme is a tool for increasing the local value added embedded in the country's exports and raising the competitiveness and maturity of SMEs to help them become direct exporters.

The programme is directed towards multinational manufacturing and services companies operating under the free trade zone (FTZ) regime supervised by PROCOMER. Companies that benefit from this regime usually establish their operations in free trade zone parks, but they can

also settle elsewhere with permission. Most of the beneficiary companies are export oriented and foreign owned. In 2010, PROCOMER broadened the scope of the programme by expanding its SDP-related services to all exporters, including those located in rural areas distant from the metropolitan region of San José.

The buyer companies in the free trade zones participate in five different global value chains: automotive parts; aeronautics and aerospace products; electronic components; filming devices; and medical device manufacturing. The average domestic contribution to these value chains varies from 22% in electronics to 72% in aerospace and aeronautics (Gereffi and others, 2013). A sixth value chain is IT-enabled services, which include call centres, back-office operations, research, engineering and design activities in different fields. Overall, PROCOMER has estimated that FTZ firms buy 17% of their inputs locally.

Suppliers are mostly locally owned small and medium-sized companies, which sell most of their products at home within sectors such as metal and precision mechanics, packaging, plastic moulding and manufacturing, and services. Most suppliers are affiliated with local business chambers, especially the Chamber of Industries of Costa Rica (CICR), which maintains a close strategic relationship with PROCOMER.

(b) El Salvador

The SDP in El Salvador aims to increase the competitiveness and income levels of local SMEs through their participation in value chains, as well as to fortify linkages between buyer companies and their suppliers to improve the distribution of benefits throughout the chain.

Traditionally, the SDP focused on small and medium-sized firms on the supply side and large companies on the demand side. It has recently expanded the scope of supplier companies to include micro-businesses. This was done to make the programme more inclusive and to reach out to non-traditional donors that support the concept. So far, most client companies have been domestically owned firms that are members of the Chamber of Commerce and Industry (CCIES). One exception is the foreign-owned beer company La Constancia, which was bought by SABMiller. Most client companies—even the larger ones—sell predominantly to the local market and export very little.

3. Methodological approach to linkages

(a) Costa Rica

The Costa Rican programme supports both the creation of new backward linkages between MNCs and supplier firms and the upgrading

of existing linkages. The SDP identifies and assesses the capabilities of potential suppliers in terms of environmental management, information systems, infrastructure, innovation, intellectual and managerial capital, investment, marketing and production capacity. Other services include a supplier database with detailed information on more than 450 SMEs in the areas of infrastructure, logistics, metal mechanics, packaging, plastics and services; the organization of tailor-made business meetings to identify supplier candidates; and sectoral mapping and company diagnostics that include technology and machinery inventories.

The SDP facilitates matchmaking through business fairs and one-on-one business meetings between suppliers and buyers. It has developed a self-service IT platform known as the Marketplace to promote matches between registered suppliers and buyers. The SDP also allocates one third of its budget to specific projects that support linkages in specific industries in both the metropolitan and rural areas of the country.

In-house experts provide guidance and facilitate networking between stakeholder companies. These experts are mostly engineering graduates who are allocated according to their specialization in relation to the value chain of the business links. These experts are able to conceptualize and quantify the characteristics of the local suppliers. After an initial diagnosis, SMEs that are considered to be “linkage ready” and willing to do the work to create or expand their linkages with interested clients are added to the supplier database.

On the demand side, the SDP services start with an analysis of a buyer’s strategic plan and value chain. A series of related suppliers are then mapped and assessed. SDP managers conduct several field visits to collect the necessary data from new companies, while simultaneously updating information gathered previously on other companies. They also have access to detailed information resources and databases maintained by PROCOMER. These include customized reports developed by buyer firms in free trade zones, which are obligatory for companies operating under this regime. Notwithstanding these information resources, the matchmaking process is highly complex owing to the high-technology components and specificities embedded in most production processes of foreign companies in the FTZ. Therefore, detailed demand specifications from FTZ firms are registered as technical specifications for buyer companies in the SDP databases, which requires specialist engineering knowledge on the part of the staff. By carefully comparing demand and supply, the SDP identifies and subsequently develops prospective matches among firms.

Once the companies are matched, their business interactions are promoted and monitored. Depending on the technological complexity, a business linkage can take two or three years to materialize. After a deal is signed, the linkage becomes certified, and only its first transaction is included in the performance metrics of the programme.

The supplier SMEs potentially benefit from the programme in terms of increased sales (conceived as indirect exports), knowledge and technology transfers and improved business practices. However, not all SMEs succeed in overcoming the performance gaps to become suppliers or are able to internalize the benefits of participation in the SDP. The linkage success of SMEs seems to depend on specific cost-reduction goals or internal improvement projects linked to their participation in the SDP. Many potential SME suppliers are hindered by several factors. First, FTZ buyers in general do not sign contracts with SMEs, even after a long-term relationship has been established. Second, many SMEs do not have the funds to obtain the required quality assurance certifications, such as ISO 9001:2008, especially within the medical device manufacturing sector. Finally, these firms feel that working with MNCs is risky as they could move their business abroad at any time.

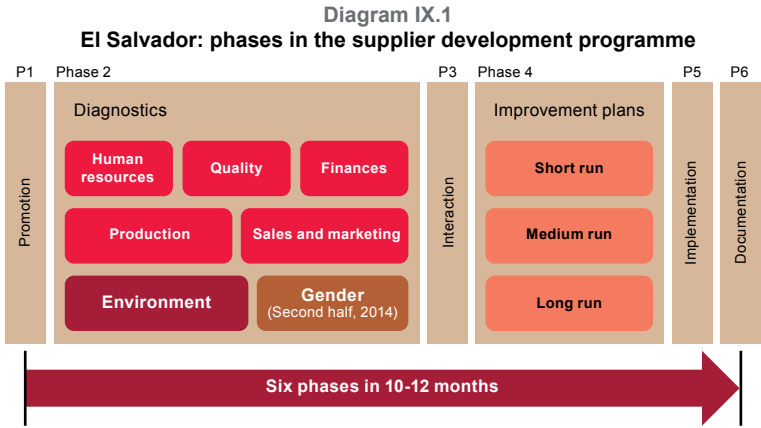
The procurement managers of successful FTZ buyers must be open-minded. They need to be committed to making the business relationship work, which implies overcoming a possible conflict of interest. On one hand, they have to dedicate time and resources to developing local suppliers, despite the risk that at the end of the process the SMEs will still not be able to meet the quality requirements. On the other hand, they can import duty-free products from established suppliers overseas. The quality and success of the business relationship also depend on information flows from possible suppliers to the SDP, the commitment of both the supplier and the buyer to making the relationship work, the trust both put in the SDP as the process facilitator and the time and financial resources dedicated to this goal.

(b) El Salvador

Unlike the SDP in Costa Rica, the programme in El Salvador does not aim to create linkages as an end in itself. Instead, it first identifies existing linkages between an anchor client company and SMEs and then seeks to further develop this bond by improving the competitiveness and productivity of the linked companies. The process starts with a targeted linkage, which includes one client (demand) company and a network of six to ten SME suppliers. Consultants implement a supplier development methodology over a period of nine to ten months, after which the client company is supposed to replicate this methodology

across the rest of its supplier network, extending its impact over time. This methodology is applicable both to backward supplier linkages and forward distributor linkages. The SDP finances up to 80% of the cost of the business development services, while the remainder is paid for by the client companies.

The SDP services start with the registration, evaluation and classification of new or existing suppliers, which is followed by six steps. First, the SDP is formalized in terms of the selection of participating companies and SDP consultants, who jointly determine the strategy. Second, the consultants use a thematic toolkit to make a diagnosis of the supplier companies, covering administrative, commercial, and environmental aspects, finances, leadership and organization. This diagnosis determines the key improvement opportunities for the companies. Third, the client and supplier interact to validate the diagnosis. Fourth, an improvement plan is designed with specific projects to address the client’s needs. Fifth, the project is implemented and monitored. Finally, the intervention is documented and repeated for other suppliers (see diagram IX.1).



Source: Prepared by the author on the basis of information on the supplier development programme implemented by the United Nations Development Programme (UNDP) office in El Salvador.

The potential benefits for SME suppliers are as follows: (i) competitive pricing as a result of cost reductions and increased productivity; (ii) reduced delivery times; (iii) improved quality; (iv) availability of technical assistance; (v) customer service; (vi) projects for operational improvement; and (vii) business management support to increase sales (PDP/UNDP, 2014). To measure progress during the diagnostics phase, a follow-up system is introduced into client companies

to monitor supplier performance and gradual improvements. These are related to operational efficiencies and continuous improvement and quality processes. If a supplier registers sufficient improvements, a supplier evaluation and certification (*Siecpro*) is issued.

The potential benefits for client companies are the following: (i) cost reductions associated with supply chain efficiency gains; (ii) continuity in assembly lines; (iii) diminished risks associated with low quality compliance in service provision; (iv) strategic procurement management; (v) development of projects for sales and quality improvement; (vi) better supplier compliance with specifications; and (vii) better communication with suppliers throughout the procurement process.

The SDP has also proven its ability to train and certify programme consultants in the supplier development methodology. Ultimately, they are the ones that provide hands-on support to the companies during the different implementation phases. A total of 46 consultants have been certified in the SDP methodology. These external consultants offer on-site coaching to supplier and client companies.

The value chains targeted by the SDP include construction, dairy products, footwear, fruits, grains, metal mechanics, pharmaceuticals, processed food, transport and vegetables. Recently, the SDP has included micro-enterprises in its supplier base, targeting microfirms that are associated with socially vulnerable young persons involved in violence. For this purpose, a new tool has been developed, called Growing with Your Business. This initiative is consistent with the UNDP social inclusion mandate, which overlaps with the interest of the current authorities at the Ministry of Economic Affairs through CONAMYPE. Associative schemes are being promoted as a way to provide efficient inclusive business-building support for these groups. This new model also seeks to strengthen small businesses in communities that have previously received training on business topics. Additionally, it fosters the creation of cooperatives by young persons with basic education and technical knowledge to transform them into suppliers of client companies.

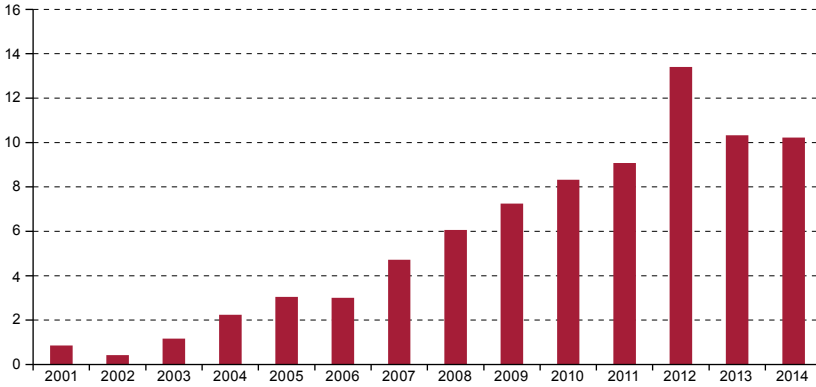
4. Main achievements

(a) Costa Rica

From 2001 to 2014, the Costa Rican SDP developed 126 new product and service linkages per year. The first transactions between suppliers and buyers stemming from these new linkages alone generated a total cumulative amount of over US\$ 80 million, as illustrated in figure IX.1.¹⁴

¹⁴ The project does not follow up on subsequent business orders between stakeholder companies.

Figure IX.1
Costa Rica: value of new product or service linkages
(first transaction only), 2001-2014
(Millions of dollars)



Source: Prepared by the author on the basis of data provided by the Foreign Trade Corporation of Costa Rica (PROCOMER).

An impact assessment by Monge and Rodríguez (2013) applied econometrics to a sample of beneficiary firms from 2004 to 2011. This study showed that the SDP has had a positive impact on the average real wages, labour demand and probability of exporting of the participating firms. These benefits were observed up to two years beyond the initial year in which the firms participated in the programme. Moreover, after having participated in the programme, SMEs generated more linkages with multinational corporations, which also had a positive effect on the performance of the beneficiary firms.

The Commission for Production Linkages has also achieved certain results, including a supplier improvement project for SMEs serving the medical device industry, an ISO 9001 certification plan for local suppliers and the design of a National Linkage Plan, which incorporates best practices from Mexico, Singapore and the United Kingdom.

(b) El Salvador

According to an IDB programme assessment conducted in December 2014, a total of 252 SMEs and micro-enterprises benefited from the SDP between May 2010 and September 2014 (De Groot, 2014). These have been linked to 36 (buyer) client companies. Of the 24 value chains in which the SDP has been implemented and for which quantitative information is available,¹⁵ 21 value chains showed increases of up to 41% in productivity

¹⁵ Unfortunately, databases and information systems in general were implemented late and contain deficiencies that limit the generation of aggregate data on company performance.

and 106% in sales, while 19 of the 24 chains recorded cost reductions of up to 46%. Similarly, for 22 of the 24 linkages assessed, the average incremental investment was US\$ 176,200, while the total investment generated across all linkages was US\$ 4,229,700. In terms of job creation, it was determined that new positions were created within 17 of the 24 linkages studied for a total of 362 new employees, 105 of which were women.

5. Future challenges

(a) Costa Rica

The SDP needs to address several challenges to further increase its impact. It must encourage more buyer and supplier companies to work hand in hand with the programme and get them to commit to developing long-term linkages. Some of the companies interviewed expressed a lack of knowledge about the SDP. PROCOMER could consider designing and executing a communication plan to address this issue. In fact, several companies visited for this investigation have researched the local market on their own and proactively targeted and contacted suppliers that were viewed as local alternatives for import substitution.

Another challenge for the programme is to find new mechanisms for providing hands-on business development support to SMEs that other entities are not offering. Buyer companies sometimes provide coaching and capacity-building opportunities to their supplier network. Similar initiatives could be proposed to the linkages commission. Many suppliers have expressed their willingness to pay for such support services in different surveys, as they are in line with their needs. Promoting and facilitating access to innovative credit mechanisms for SME suppliers is also urgent.

Given the programme's established reputation, there is significant potential to extend supplier development initiatives to other key income-generating sectors, such as agribusiness and tourism. In this regard, PROCOMER should consider establishing partnerships with other industry-specific strategic allies, such as the Costa Rican Tourism Board (ICT), as well as working more formally with CINDE. The latter is the leading counterpart of FDI investors, which eventually become buyer company clients for the programme. Along the same lines, CINDE has recently announced that it will revisit its strategy to include agribusiness as one of its investment promotion targets.

The SDP has room to increase its business-generation capacities in terms of both the number of linkages and the transactional amounts. Costa Rica has become a strategic FDI destination in Central America, with annual FDI inflows of over US\$ 2 billion. It thus has valuable assets such as sustained institutional funding, specialized FDI industry knowledge

and strong IT resources (database and marketplace). In addition, the SDP impact assessment needs to include business follow-ups to complement the use of first transactions as a measure of linkage success.

(b) El Salvador

The SDP in El Salvador has had a growing impact across different types of companies and economic sectors, in part due to the stable institutional setting. This continuous support consists of the original UNDP partnership and its permanent institutional host (CCIES), in addition to other key stakeholders such as IDB and USAID, which contributed to the programme's initial resources. This programme is unique in its market orientation, use of technology, sector participation and ownership of the participating client and supplier companies. The strengths of the programme include its own methodology, the highly skilled certified consultant roster and its customized IT resources.

The developmental impact of this experience needs to be further analysed in terms of variables such as the number of business opportunities generated, the job creation potential, sustainability and escalation. Going forward, the results of a new joint SDP-UNDP initiative for micro-entrepreneurs, called *Creando su Empresa*, should be evaluated.

The robust methodology and know-how of the SDP, implemented through intensive coaching techniques oriented towards increasing SME business skills and abilities to enhance competitiveness, provide a strong support approach that is well recognized by business development entities and extremely valued by participating companies, as opposed to the conventional entrepreneurial training platforms with little or no follow-up. The Salvadorian SDP goes beyond analogous initiatives that rely on pure matchmaking exercises and do not call for a commitment to short-term business goals or medium- and longer-term developmental outputs. With its well-established track record, the Salvadorian model is being exported to other countries with similar needs, such as Colombia and Haiti.

The IDB assessment and the interviews with supplier and client companies conducted for this chapter underscore the availability and quality of the services provided by the consultants, who were committed to helping and monitoring the companies in their pursuit of the planned goals. However, they also highlight the relatively short duration of the support provided to implement the improvement plans.

The SDP could expand its services to become a more comprehensive programme by building linkages with strategic allies that offer other business development services. At the same time, a key challenge is to scale up the SDP to the level of a national policy with a view to further boosting business competitiveness and productivity using its unique methodology.

The co-payments by the firms for the support activities carried out by the consultants have helped to secure the participants' involvement in and commitment to the programme. However, as these co-payments cover only part of the costs, developing new and sustainable funding sources remains a challenge.

It is worth exploring the programme's potential for working with domestic and foreign-owned export-oriented companies in manufacturing, tourism and other services. These firms are characterized by a higher technological content. Related local entities such as the Export and Investment Promotion Agency of El Salvador (PROESA) and the Salvadorian Tourism Board (CORSATUR) could prove to be strategic allies in the future.

D. A comparison of the two supplier development programmes

The SDPs in Costa Rica and El Salvador have proven to be quite successful. Both countries have a relatively strong base of small and large entrepreneurs, which provides fertile ground for the further expansion of business development initiatives.

There are two major differences between the programmes. First, the SDP programme in El Salvador targets domestically owned businesses, whereas the SDP in Costa Rica followed the original philosophy of the United Nations Conference on Trade and Development (UNCTAD), which aims to develop mutually beneficial businesses from foreign direct investment that is located in the host country for efficiency-seeking purposes.¹⁶ Second, the SDP in El Salvador focuses on existing value chains between anchor client companies and a network of suppliers, whereas the Costa Rican SDP seeks mainly to develop new linkages and, in some cases, to attract new foreign companies through collaboration with CINDE. This is a highly valued service for these new companies, as it helps to shorten the time required to access the market.

The different target groups in the two countries can be explained, in part, by the institutions that host the programmes. In Costa Rica, the SDP is embedded in PROCOMER, which is focused on promoting exports. In El Salvador, the SDP is hosted by the Salvadorian Chamber of Commerce and Industry, which serves mainly domestic firms. These differences are also reflected in the goals pursued by each programme, as seen in table IX.3.

¹⁶ However, the methodology of the original UNDP programme in Mexico targeted the demands of FDI companies with operations in that country.

Table IX.3

Costa Rica and El Salvador: comparative matrix of supplier development programmes

Characteristics	Costa Rica	El Salvador
Institutions	Hosted by the public sector through the Foreign Trade Corporation of Costa Rica (PROCOMER)	Hosted by the private sector through the Chamber of Commerce and Industry (CCIES)
Programme goals	<ul style="list-style-type: none"> • Improve investment climate for foreign direct investment (FDI) • Increase local value added content of exports • Foster the exports of small and medium-sized enterprises (SMEs) • Improve SME capabilities • Strengthen national supply 	<ul style="list-style-type: none"> • Increase SME competitiveness and revenue flow • Improve social inclusion
Sources of financing	Inter-American Development Bank (IDB), PROCOMER	CCIES, IDB, United Nations Development Programme (UNDP), United States Agency for International Development (USAID)
Staff	<ul style="list-style-type: none"> • Programme director • Promotion specialists (4) • Project development officers (2) 	<ul style="list-style-type: none"> • Programme coordinator • Support specialist (1) • Administrative officer (1) • IT expert (at UNDP) (1)
Industry focus	<ul style="list-style-type: none"> • Buyers: electronic components, medical device manufacturing, business services • Suppliers: agribusiness, metal parts, precision metal mechanics, packaging, plastic products, chemicals, logistics and services 	<ul style="list-style-type: none"> • Buyers: agriculture (grains, vegetables, fruits), construction, dairy products, food products, footwear, metal mechanics, pharmaceuticals, retail, transport and other services • Suppliers: cereals and vegetables, footwear supplies, pharmaceuticals, transportation, construction, fishing and clothing
Company scope	<ul style="list-style-type: none"> • Buyers: large exporters, mostly high-tech, export-oriented multinational firms operating in free trade zones, with some located in less developed regions • Suppliers: local SMEs, with some exports 	<ul style="list-style-type: none"> • Buyers: medium-sized and large firms, domestically owned and oriented towards local markets • Suppliers: local micro-enterprises and SMEs, aimed mostly at the local market
Support approach	SDP support provided by in-house expert staff who network, provide guidance and interface between stakeholders	SDP support provided through external consultants who provide on-site coaching to supplier and client companies
Pricing	Support services provided at no charge	Programme finances 70-80% of the cost, while the remaining 20-30% is usually covered by buyer companies
Type of intervention	<ul style="list-style-type: none"> • Programme supports the creation of new linkages and upgrading of existing (backward) linkages • First, a buyer's value chain and strategic plan is analysed • Related suppliers are then mapped and assessed • Business interaction is followed up • Time to mature linkages could be up to three years 	<ul style="list-style-type: none"> • Programme targets existing backward and forward linkages • A buyer is chosen as anchor for 6-10 chained suppliers • Intervention includes six sequential phases • Typical intervention time is 10-12 months

Table IX.3 (concluded)

Characteristics	Costa Rica	El Salvador
Key assets	<ul style="list-style-type: none"> • Sustained institutional funding • Specialized FDI industry knowledge • Supplier database • Marketplace 	<ul style="list-style-type: none"> • Own proven methodology • Certified consultant roster • Customized IT resources
Main achievements	<ul style="list-style-type: none"> • Average of 126 new product and service linkages per year in 2001-2014 • Total cumulative first transactions of over US\$ 80 million • Significant positive impacts on real average wages, labour demand and probability of exporting identified • Participation in the programme and number of linkages generated had a positive impact on SME performance 	<ul style="list-style-type: none"> • 252 SMEs and micro-enterprises linked to 36 buyer companies in 2010-2014 • 10 entrepreneurship projects to support at-risk youth • 41% increase in productivity and 106% increase in sales; significant cost reductions and job creation in the majority of cases • Cumulative investment of US\$ 4.3 million
Future challenges	<ul style="list-style-type: none"> • Increase impact of SDP by including other industries, such as agribusiness and tourism • Find new ways to coordinate hands-on development support to SMEs • Improve impact assessment by adding business follow-ups to complement the measure of first transaction 	<ul style="list-style-type: none"> • Reassess impact from new perspectives, including the new inclusiveness component • Extend short support duration • Expand services by coordinating with other development services • Convert SDP into a national policy to increase business competitiveness • Strengthen programme's sustainability • Work with foreign-owned firms, tourism and other services activities

Source: Prepared by the author.

From a financial perspective, both programmes have largely been supported by the IDB Multilateral Investment Fund: US\$ 1 million for Costa Rica and US\$ 900,000 for El Salvador. In the case of El Salvador, initial financial support of US\$ 633,000 from UNDP and parallel knowledge transfer were critical for launching the SDP.

In terms of personnel, the Salvadorian programme has been relatively more restrained than its Costa Rican counterpart. This may be because PROCOMER has more resources to back and sustain the SDP. The Costa Rican SDP business model has been able to operate through an in-house staff of experts who provide support to the programme's stakeholders. In El Salvador, the expert support that the SDP extends to its client and supplier affiliates is offered through a roster of highly skilled certified consultants who provide on-site coaching activities.

Both programmes target a wide array of industries. In Costa Rica, most buyer companies are from leading FDI industries, including medical devices and electronics, which need metal and plastic parts, components and subassemblies that are later embodied in the high-technology products they export. In El Salvador, most production sectors in the

economy consist of locally owned medium-sized and large companies that source inputs from smaller firms. The Salvadorian SDP has also expanded its coverage to address the needs of at-risk youth.

Pricing also differs between the two programmes. In El Salvador, UNDP currently subsidizes part of the project, but the SDP will have to be self-sustaining in the future. Most client companies interviewed in El Salvador valued the programme's support and said that they would consider contributing more for the intervention or even cover the full cost.

The duration of the SDP intervention in Costa Rica is much longer than in El Salvador. This is due, in part, to the higher technological content associated with the SDP linkages in the Costa Rica. After the consultants conduct the analysis and assessment of the buyer company and its prospective suppliers, it can take up to three years for a linkage to materialize. During this period, the programme team monitors the process, interacts with all the companies involved and follows up on the business development until the linkage has been implemented. In contrast, the on-site interventions conducted by the Salvadorian SDP are short-term, intensive and focused on improving business practices to achieve specific goals and enhance linkage competitiveness.

Finally, both programmes benefit from highly valuable assets. Costa Rica's SDP relies on its established funding, strong institutional backing, specialized technical knowledge of the industries with which it works and a large database of more than 450 suppliers. Moreover, it has an online self-service IT platform to promote matches between registered suppliers and buyers. For the Salvadorian SDP, the locally adapted version of the UNDP methodology has proven a unique knowledge resource, and it has even been exported to other countries, together with the associated IT toolkit. The highly skilled certified consultants have also contributed much to its success.

E. Examples of successful supplier development through the programmes

(a) Costa Rica

(i) Trimpot Electrónicas, Ltda. (buyer)

Trimpot Electrónicas is a manufacturing affiliate of Bourns, Inc., a long-standing electronics company headquartered in Riverside, California, that serves several industries, including the telecommunications, instrumentation, automotive, consumer and medical industries. Its manufacturing and research and development facilities, which include Trimpot, are strategically positioned in key locations around the world. Bourns established Trimpot in 1979 as a production plant in the free trade

zone of Heredia, where it manufactures electronic parts and components: its leading product lines are capacitor networks, communication protection products, trimming potentiometers and resistors. Trimpot has always looked for new ways to control its operating costs, as increasing competition from other parts of the world continually reduces the already low margins.

An executive at Trimpot explained that the company had never had a corporate policy for supplier development.¹⁷ However, in 2000, the firm decided to promote a new business culture oriented towards continuous improvement. It introduced a lean manufacturing objective that led to the adoption of a philosophy of good manufacturing practices and increased closeness to suppliers. Trimpot decided to include part of their supply network in Kaizen training sessions (a continuous improvement practice originally developed in Japan), which were provided free of charge. These sessions aimed to improve their relationship and create a mentality for generating mutual savings, which could later be shared between Trimpot and its entire SME supplier base. Trimpot has also financed audits at the supplier premises, which were repaid through in-kind product delivery to Trimpot.

Currently, the main driver for improving the performance of its 15 substantive suppliers is the cost-reduction programmes, which define annual goals for the firms. The main benefits of using local suppliers rather than importing products from foreign suppliers come from reduced delivery times that allow the companies to decrease their inventories, combined with the corresponding elimination of international shipping costs.

Delays (stemming from claims or product modifications) can be short only when the company has an adequate local supplier base.¹⁸ To help Trimpot develop a base that meets the company's specific needs, the SDP of PROCOMER recently organized a specialized local supplier fair at the Trimpot premises, which turned out to be very successful. This event resulted in the development of several linkages for their corrugated cardboard inputs. In total, there were 11 SMEs in printing and tag manufacturing, among other sectors, that were able to exhibit their product lines at the fair in Trimpot. During this first supplier fair, Trimpot also explained procedures and norms that will help suppliers implement quality manufacturing processes in line with the needs of high-technology companies located in the country.

Examples of long-standing suppliers include Polycom and Electroplast. The latter firm has experience in medical device manufacturing, for which it obtained quality system certification. According to an interview conducted with the head of validations and

¹⁷ Interview with Manuel Escobar, Vice President of Finance.

¹⁸ According to conversations with Alfred Teufel, Procurement Manager for Trimpot.

special projects at Electroplast, SMEs that aim to sell to MNCs can increase their chances for success by employing someone who has previously worked at a buyer company. Improving access to financing and developing customized programmes are also critical to increase SME performance, as well as expanding the role of the SDP to include intensive business development support for small firms.

(ii) Atemisa Precisión S.A. (supplier)

Created eight years ago, Atemisa Precisión is a small precision metal mechanics shop, which produces fixtures, industrial maintenance prototypes, metalwork and parts. Its staff include qualified personnel in several fields of precision mechanics, with more than 20 years of experience. The firm invests considerably in customer service, as it attributes its success to its clients' satisfaction. Customers come from electronics, medical device manufacturing and metalworking. They include firms such as Abbott, Baxter, Helix Medical, Hologic, Hospira and Panduit. The company is also looking into supplying the aeronautics and aerospace industry. The company's mission is "to offer innovative and technological solutions to the country's medical and industrial sector through a continuous process improvement based on global quality standards and compliance with environmental regulations, creating good job opportunities and generating financial resources."

The company's founder, Kelly Duarte, used to work for a multinational company in the free trade zone (Microtechnologies) and decided to establish his own business.¹⁹ During the first four years, he subcontracted most of his clients' orders to local metal mechanic workshops. Initially, Atemisa experienced financial stress because its suppliers demanded cash payments, whereas its clients would only pay on credit. The company had to finance its operations through extended payment terms granted by its main machinery provider (Copre). It was found that the best strategy was selling to foreign companies due to their stable demand and on-time payments. However, this required multiple corporate clients, most of which do not extend contracts to the company. Another issue is that few multinational companies promote the transfer of technology or knowledge to local suppliers. In addition, to meet the high standards and stringent qualifications of its clients, Atemisa must continuously conduct research related to processes and industry-specific machinery.

The key factors behind the company's success were the founder's proactive and perseverant attitude, constant availability and ability to meet clients' requirements in terms of price, delivery times and quality.

With regard to support from PROCOMER, a close relationship was built over four years between Atemisa and the programme. In addition to

¹⁹ Based on conversations with Kelly Duarte.

organizing supplier fairs, the SDP provided valuable marketing efforts that identified one new local client and one other abroad. Moreover, Atemisa is listed in the Marketplace and the PROCOMER VIP Business Book. Moreover, the SDP and the Chamber of Industries of Costa Rica (CICR) are currently funding Atemisa for up to 60% of the cost of obtaining ISO 9001 and 14001 certifications. This will strengthen the firm's standing within the medical device manufacturing industry.

(b) El Salvador

(i) Los Quesos de Oriente, S.A. de C.V. (buyer)

The Macay family launched its cheese company, Los Quesos de Oriente, in Sonsonate in 1986, after raising cattle in the eastern region of the country for many years. Using her entrepreneurial skills, the founder, Mirna Macay, decided to establish a boutique dairy in Sonsonate, producing and selling specialty products.²⁰ She soon expanded and diversified her product basket, and the firm was selected as a client company for the Salvadorian SDP. Prior to this, the firm applied to the Production Development Fund (FONDEPRO) for funds, but the application was rejected mainly because of organizational problems within the company.

Los Quesos de Oriente joined the SDP as a buyer company. In June 2012, it chose to work with 12 different suppliers of chocolate products, livestock, packaging, printing and raw materials. The diagnosis of Los Quesos de Oriente revealed important gaps in the company's business in terms of cost control, financing (an auditor was established in this area), human resources and physical infrastructure. The recommended intervention was fully implemented. The company worked simultaneously on two dimensions of the value chain: as a buyer for the cheese factory at Los Quesos de Oriente, and as a supplier to the milk delivery company with which it was vertically integrated.²¹

The founder developed several critical skills through the SDP. She considers the SDP a successful tool that addresses the entire business process, in contrast to unfocused training sessions offered by other competing facilitators. The main business developments were a restructuring of the sales department (with individual assignments to each of the sales channels) and administration. The programme's success in her company was attributed to the intensity of the intervention and the full participation of her staff and supplier network. After completing the intervention, the founder replicated her experience backwards with her own suppliers of livestock products, for which a collection centre was

²⁰ Based on an interview with Mirna Macay.

²¹ From 2012 to 2015, the firm's participation as a supplier in the SDP contributed to tripling its milk production by improving the cows' diets and implementing best milking practices.

eventually established. She also convinced another supplier firm, called Equitec, to participate in the SDP. This participation improved Equitec's performance in terms of follow-up practices, client services and product quality and thus also benefited Los Quesos del Oriente.

(ii) MC Representaciones, S.A. de C.V. (supplier)

MC Representaciones, better known as Distribuidora MC, is a family business that supplies inputs to the dairy industry in El Salvador. With more than 15 years in the business and a small staff of 10 employees, it has a wide client network around the country. One of the company's customers of more than 20 years, Los Quesos de Oriente, convinced the owners to join the SDP as part of its network of suppliers. At first, they perceived their enrolment in the programme as a pure expense instead of an investment. This feeling predominated throughout the diagnostics phase, when many business gaps were identified. However, their opinion shortly changed as they began to see improvements in their operations. In particular, the SDP led the company to create its own separate commercial entity and to diversify its core business within the food products industry towards a product mix that now involves preservatives, sweeteners, acidifiers, coagulant enzymes and cleaning products. MC is also negotiating new product representations from Argentina and Mexico.

In addition, the SDP consultant persuaded the company's owners to relocate operations from their house to a strategic location in a large warehouse and to incorporate good storage practices. This move coincided with the creation of a new corporate image, which led to a marked increase in sales under a new private brand. This recovery was urgent as the company had suffered a significant downturn in 2011.

At the end of the intervention process, MC reported a 60% increase in sales, an expansion of its product portfolio to include 13 new items and a significant development of its client base (from 420 to 470 buyers). The SDP was also instrumental in obtaining support from the Technological University of El Salvador in the form of student internships through which four interns (who were later hired as regular employees) rebuilt the administrative and marketing departments and launched a new website for the company.

The owners of MC gave two reasons for the success of the SDP: the enthusiasm of Los Quesos de Oriente in helping the company make progress and convincing them to get involved in the process; and the personal qualities and commitment of the assigned SDP consultant. After completing the intervention, MC replicated its experience with its own affiliated suppliers. In addition to the SDP, MC has also received support from FONDEPRO to adapt the new warehouse to the company's needs.

F. Concluding remarks and policy recommendations

Successful business linkages created under the SDPs in Costa Rica and El Salvador depend on an intimate relationship between consultants or officers and stakeholder companies. In this regard, intensive coaching support linkage development can make a large contribution, as illustrated by the SDP methodology carried out in El Salvador and the internal efforts by multinational companies for their suppliers in Costa Rica. This approach contrasts with thematic business training activities or other initiatives oriented towards the same goal. One frequent suggestion by stakeholders in both countries is to increase the duration of the assistance provided through the SDPs.

Expert assessments and interviews conducted for this study show that the success of linkage development depends on the initial motivation and the subsequent degree of involvement and commitment by the buyer company. Unfortunately, few firms have proactive procurement departments (especially those operating under incentive regimes), in particular because of the ease with which they can buy goods from well-established suppliers abroad. This potential conflict of interest hinders local supplier development, but it can be resolved in two ways: by defining internal strategic goals directed at increasing purchases from local suppliers; and by setting specific targets for the buyer companies, since a large number of firms are not aware of the long-term benefits of buying locally in terms of decreased costs and improved delivery and service times owing to better logistics. In addition, existing corporate social responsibility initiatives can be extended to include SME mentoring and coaching programmes within their scope.

The growing tourism industry in Costa Rica and El Salvador offers major opportunities for the creation and development of local SMEs. The large local and FDI companies operating within this industry have a significant demand for a variety of goods and services that are less technology-intensive than in other industries discussed in this document. The Costa Rican Ministry of Economic Affairs financed a study of the tourism industry in the northern area of the province of Guanacaste. The study, which identified 154 hotels with existing candidate SMEs in that region, mapped demand and business opportunities in six procurement categories: (a) infrastructure; (b) security; (c) general maintenance; (d) supplies; (e) services; and (f) software products (Madrigal and Hernández, 2004). Unfortunately, the effort was not sustained, perhaps due to lack of institutional backing and industry affinity, and the information is now largely out-of-date. Nonetheless, the original idea could be rescued from within the local tourism boards—which in both countries are executing agencies with large budgets and deep knowledge of industry stakeholders—and a proper methodology could be developed.

Governments and public policy play a leading role in fostering the development of local micro-, small and medium-sized suppliers throughout the economy, either through individual or associative schemes. The procurement opportunities of large local and foreign companies may be another mechanism for business development and should therefore be broadened and deepened. In addition to its role in formulating and implementing policies, the government and its related entities have extensive purchasing power to buy goods and services from local companies. Specialized know-how gathered across different SDPs could also be used by selected procurement departments within or attached to the government and its autonomous (buyer) entities. Besides the obvious benefits to associated micro-enterprises and SMEs, an SDP initiative executed within the government structure provides the authorities with a way to “walk their talk” in regard to supplier development and inclusive business development in general.

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Annex IX.A1

List of people interviewed

Name	Entity	Position
Calles, Herman	Grupo Multitalleres, S.A. de C.V.	General Manager
Castro, Luis Armando	SDP, El Salvador (Chamber of Commerce and Industry (CCIES))	Coordinator
Castro, Marlon	Ruimaga, S.A. de C.V.	Sales Manager
Cruz, Mario	Equitec, S.A. de C.V.	Director General
De Gálvez, Ethel	Farmacia Jerusalén, S.A. de C.V.	General Manager
De Macay, Mirna	Quesos de Oriente, S.A. de C.V.	General Manager
Dobles, Rolando	Foreign Trade Corporation of Costa Rica (PROCOMER)	Director, Export Linkages
Domingues, Marielos	Ministry of Economic Affairs, El Salvador	Specialist, Promotion Division
Duarte, Kelly	Atemisa Precisión, S.A.	President, General Manager
Dubón, Claudia	United Nations Development Programme (UNDP), El Salvador office	Coordinator, Human Development
Escobar, Manuel	Trimpot Electrónicas, Ltda.	Vice-President of Finance
González, Carlos	UNDP, El Salvador office	IT Specialist
Gutiérrez, César	Arthrocare Costa Rica, Ltda.	Senior Manufacturing Engineer
Guzowski, Gary	Techshop Internacional, S.A.	General Manager
Hernández, Brian	MC Representaciones, S.A. de C.V.	General Manager
Hütt, Arnoldo	Arthrocare Costa Rica, Ltda.	International Purchasing Supervisor
López, Mario	SDP, El Salvador	SDP Consultant, Agribusinesses
Martínez, Yasmín	CCIES, El Salvador	Project Manager
Pacheco, Godofredo	UNDP, El Salvador office	National SDP Coordinator
Paredes, Armando	Transportes Peña, S.A. de C.V.	Sales Representative
Rivera, Marielos	SDP, El Salvador (CCIES)	Administrative-Financial Affairs
Salazar, Diana	Costa Rican Investment Promotion Agency (CINDE)	Corporate Development Affairs
Trujillo, Karla	El Garucho de R.L.	President
Vicente, Diego	Electro Plast, S.A.	Validations/Special Projects
Zelada, Herberth	Grupo GW, S.A. de C.V.	President, General Manager

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A specialist from the Division on Investment and Enterprise at the United Nations Conference on Trade and Development (UNCTAD) since 1998, with an academic background centred on issues relating to entrepreneurship and the development of small and medium-sized enterprises (SMEs), including innovation, business linkages and global value chains. Before joining UNCTAD, she was a researcher at the Directorate for Studies of the Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA) in Rome, where she undertook several studies on innovation and technology in traditional sectors and was involved in a large European Union project for industrial upgrading in the Southern Common Market (MERCOSUR). After joining UNCTAD, she assumed responsibility for the UNCTAD entrepreneurship development programme, EMPRETEC, in Latin America. She manages technical assistance projects for SME upgrading and the creation of business linkages between transnational corporations and local suppliers in emerging and least developed countries in Africa, Asia and Latin America. She holds a master's degree in international economic relations from the Rome-based LUISS University and a doctorate in economic and policy studies on innovation and technical change from Maastricht University in the Netherlands.

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of California, Los Angeles, United States, after completing a bachelor's degree in economics at the University of Costa Rica, where he also taught at the School of Economics and conducted research at the Research Institute. He has held key positions in various development organizations, including General Manager of the Foreign Trade Corporation (PROCOMER) and Director of Investor Services at the investment promotion agency of Costa Rica (CINDE). He previously served as the Executive Director for Estrategia Siglo XXI, an organization dedicated to implementing Costa Rica's development road map to 2050. In addition, he has worked as a consultant for ECLAC in Chile, the Inter-American Development Bank (IDB) in Washington, D.C., and UNCTAD in Geneva.

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La revista se publica desde 1973 y aparece dos veces al año, en junio y diciembre.

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Rising concentration in Asia-Latin American value chains

Can small firms turn the tide?

KEIJI INOUE
NANNO MULDER
OSVALDO ROSALES
Editors

Economic Development

Dynamic Asia has overtaken the European Union as Latin America and the Caribbean's second largest export market, after the United States. However, the region's exports to Asia remain concentrated in few commodities involving a small number of large firms. This book explores the present and future scope for the participation of small and medium-sized enterprises (SMEs) in biregional trade and value chains and the measures that can be taken to make those chains more inclusive and sustainable. SMEs have a low direct presence in the region's export flows and their participation in the supplier networks of multinational companies is weak. This volume reviews several supplier development programmes (SDPs) adopted in various countries in Asia and Latin America to increase SME linkages with multinational firms. These programmes, many of which are public-private initiatives, aim to boost SME productivity and enhance their participation in value chains. The book concludes that governments in Latin America must improve the business environment in order to encourage multinational firms to invest, upgrade and innovate in the region. Furthermore, multinational companies and governments should scale up their SDPs so as to forge more business linkages with SMEs, which would in turn narrow their productivity differentials with large firms and reduce overall income inequality.

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