



Sistema Económico  
Latinoamericano y del Caribe

---

Latin American and Caribbean  
Economic System

---

Sistema Econômico  
Latino-Americano e do Caribe

---

Système Economique  
Latinoaméricain et Caribéen



# Productive and Industrial Development Policies in Latin America and the Caribbean

**Intra-Regional Relations**

*I Meeting of Ministers of Economy and Industry of CELAC  
San José, Costa Rica  
10 and 11 April 2014  
SELA-CELAC/DT N° 1-14*

Copyright © SELA, April 2014. All rights reserved.  
Printed in the Permanent Secretariat of SELA, Caracas, Venezuela.

The Press and Publications Department of the Permanent Secretariat of SELA must authorize reproduction of this document, whether totally or partially, through [sela@sela.org](mailto:sela@sela.org). The Member States and their government institutions may reproduce this document without prior authorization, provided that the source is mentioned and the Secretariat is aware of said reproduction.

# C O N T E N T S

## *FOREWORD*

EXECUTIVE SUMMARY	3
I. INTRODUCTION	9
II. CHARACTERISTICS OF LATIN AMERICAN AND CARIBBEAN ECONOMIES AND TRANSFORMATIONS DURING THE PERIOD 1990-2011	10
1. Evolution of GDP, productive structure and productivity	10
2. Foreign trade, exports specialization and levels of technological sophistication	14
3. Comparison between the investment and productive structures in Latin America and the Caribbean and the countries of Southeast Asia	18
III. REGIONAL INTEGRATION	20
1. Background	20
2. Intra-regional trade, productive integration and asymmetries	21
IV. PRODUCTIVE DEVELOPMENT POLICIES IN THE REGION	26
1. The legacy of previous industrial development policies	27
2. Policies to support SMEs	28
3. The re-emergence of development banks	30
4. Creation of suppliers, information networks and foreign investment	32
V. REGIONAL R&D POLICIES TO PROMOTE GREATER ADDED VALUE AND COMPETITIVENESS	33
VI. CONCLUSIONS AND POLICY PROPOSALS	38
BIBLIOGRAPHY	42



---

**F O R E W O R D**

---

*This document has been drafted pursuant to Activity I.1.1 of the Work Programme of SELA for the year 2014, "Compliance with the Decisions of the Latin American Council regarding the links of SELA and its Work Programme with CELAC: Productive and industrial development".*

*At the request of the Ministry of Economy and Industry of Costa Rica, the document will be submitted to the First Meeting of Ministers of Economy and Industry of CELAC, to be held in San José, Costa Rica, on 10 and 11 April 2014.*

*With the ultimate purpose of making further proposals, the study enhances a work conducted by SELA during the Meeting of High-Level Officials on Productive and Industrial Development in Latin America and the Caribbean, held at SELA headquarters on 3 and 4 October 2013 in compliance with a mandate of the Pro Tempore Presidency of CELAC.*

*The document has six chapters, namely: I. Introduction; II. Characteristics of Latin American and Caribbean Economies and Transformations during the Period 1990-2011; III. Regional Integration; IV. Productive Development Policies in the Region; V. Regional R&D Policies to promote greater Added Value and Competitiveness; and VI Conclusions and Policy Proposals.*

*The Permanent Secretariat of SELA thanks Dr. Claudia Schatan for her valuable work as the consultant in charge of preparing this study.*



## EXECUTIVE SUMMARY

The countries of Latin America and the Caribbean (LAC) have very heterogeneous features in terms of the size of their economies, per capita income, territorial extension, distribution of income, institutional environment and climate, among others. Additionally, these economies have had a low economic growth dynamics in the past 21 years, in comparison with China, India and other Southeast Asian countries. Also, their productive structure has changed to favour the services sector, which shows the most deficient performance as regards productivity.

The low economic dynamism of the manufacturing and agricultural sectors in the region and their technological backwardness have turned the services sector into a receptacle of informal employment in low added-value activities. Thus, despite the modernization that may have been experienced in the sub-sectors of financial intermediation, transport and telecommunications and the creation of new niches – such as business services – all this has failed to counteract the backwardness of the broad service sector, which continues to show low productivity.

The profile of Latin American and Caribbean countries as exporters shows a marked specialisation in raw materials exports and, to a lesser extent, medium technology products. If primary products and labour-intensive manufactures from raw materials of natural origin are added, they reach almost two-thirds of total exports of goods, while high-tech exports account for only one-tenth of the total. However, this profile varies, depending on the destination of exports: Those that are destined to Asia and Europe are predominantly primary products, while those aimed at the United States are mostly manufactured goods, which indicates that there are industrial value chains with this country (even though part of such activity corresponds to assemblies in Latin America and the Caribbean). More than half of intra-regional trade consists of manufactured products, predominantly intermediate-technology goods.

The possibility for the countries of the region to make technological progress up the value chain, to improve productivity, generate better jobs and bridge the gap with developed countries largely depends on the portion of GDP that they invest. In this connection, it should be noted that economic growth in Southeast Asian countries in 2010 was fuelled by a high investment rate (30.6% of GDP), whereas in Latin America and the Caribbean the investment rate was 7% lower (in 2010), according to World Bank data. In this regard, while the share of manufactured goods in the GDP increased from 22% to 27% on average between 1990 and 2010 in the region, Latin America and the Caribbean suffered a de-industrialization during that period.

The importance of the manufacturing sector in most of Southeast Asian countries and China is one of the main reasons for their increase in productivity and exports dynamics, both due to its intrinsic effect and its ability to create high-quality jobs. Also in that region commercial services sector increases its productivity, without letting the volume of employment grow much – which generates a virtuous circle between the growing industrial dynamism and the modernization of the service sector.

In essence, one of the most important differences between the successful experiences of Asian countries in general and those of Latin America and the Caribbean, is that the former swiftly developed the capacity to generate knowledge, while such process is still lagging behind in Latin America and the Caribbean. On average, LAC countries invested barely 0.83% of their GDP in Research and Development (R&D) in 2010, with the largest

## 4

investments being recorded in Brazil (1.16%), Argentina (0.62%), Costa Rica, Mexico and Uruguay (between 0.4% and 0.5%). In contrast, South Korea invested 3.74%, China 1.76% and Malaysia 1.07%.

The Achilles heel of Latin American economies is precisely their relatively low level of productivity and the fact that the pace of technological change is neither enough nor properly distributed throughout the productive structure (regions, types of enterprises, industry sectors), which does not allow the economy's average productivity as a whole to progressively approach to that of the developed world.

Thus, technological efforts in Latin America and the Caribbean – including the resources allocated for that purpose – do not have the necessary scale or depth to explore new technological frontiers. The causes of this little inclination towards innovation include the lack of an adequate incentive regime, the absence of public goods and the insufficient public-private coordinating efforts that encourage the private sector to go in that direction.

Trade liberalization, whether through regional and subregional integration agreements, FTAs, or unilateral openings, resulted in a great increase in exports, including those destined for the region itself. However, intra-regional trade reached somewhat more than 20% of total trade, while at the subregional level it amounted to 25%. In addition, increased trade has not resulted in bridging economic and social gaps among the countries in the region and within them. The increased trade has been asymmetric between some advanced countries and those still lagging behind in the region, thus generating significant trade deficits of the latter with respect to the first group of countries. It has aggravated structural asymmetries rather than reducing them.

These asymmetries reflect unequal production capacities in the manufacturing sectors, but they also are a sign of the heterogeneous factor endowment of countries, which requires an intense commercial exchange of raw materials or natural resource-intensive products among them, including natural gas, crude oil, non-milled wheat, soybean oils, soybean cakes, copper and its alloys, corn, steel ingots and bars, soy beans, alloys, among others.

Within this scenario, however, there are positive elements that tend to support greater economic and productive integration in LAC and might therefore contribute to overcome asymmetries in the future. They include investments in infrastructure, trade facilitation (simplification of customs procedures through the establishment of foreign trade single windows and automation of customs procedures), and improvements in transportation and business and labour mobility. Although these efforts have been made mainly to promote intra-regional trade, they are essential for joint production and the integration of production chains. Within the shared infrastructure, we should as well consider the effect of the revolution of the information and communication technologies, which, by building up advanced networks, allows the countries to interconnect and coordinate joint production processes. The public-private alliances have proved to have a crucial importance in strengthening the regional infrastructure of all types.

A second factor stimulating economic and productive integration are the investments of big Latin American companies in other countries of the region (the so-called trans-Latin firms) in diverse areas such as infrastructure, services (banking, supermarkets, telecommunications, etc.), and manufactured products (chemicals, petrochemicals, all types of food, beverage, textiles, electronics and others).

The investments made by multinational firms with plants in various countries of the region – which usually concentrate on certain points in the value chain (for instance, the automobile and electronic industries) also help to further integrate the region in terms of production of goods and services, even with a relatively high levels of technological sophistication.

A third source of regional integration are the specific, usually sub-regional, programmes where the public and private sectors take part. Such is the case of the Productive Integration Programme of MERCOSUR of 2008, which includes programmes to develop suppliers in the oil and gas sector, the Executive Group for Automotive Chain Production Integration (GEIPA), the Tourism Routes Programme, the MERCOSUR Programme of Business Articulation for Productive Integration, the naval sector, and the MERCOSUR Competitiveness Forum on the Audiovisual Productive Chain.

A fourth way to stimulate regional productive integration so as to overcome asymmetries are the programs designed and financed by the governments of the countries of one subregion, for instance the Fund for Structural Convergence of MERCOSUR (FOCEM).

The fifth group of initiatives that may contribute to the development of production with a positive social impact is one that focuses on the border areas between Latin American and Caribbean countries, which are inhabited by marginalized communities. Some border development programmes in force in the region show the concern that certain countries have about this issue. However, it is necessary to think about new, non-traditional activities in border areas that may be financed with regional and international funds. Border areas are, in most cases, very rich in natural resources, particularly forests and water, but there are also important urban centres in border areas.

Most Latin American and Caribbean countries have an immense biodiversity, with large forests, water bodies, and other natural resources that may offer a number of activities and jobs, which, used in a sustainable way, may create additional wealth for those countries.

Thus, the regional and subregional integration policy should focus not only on reducing transaction costs and coordinating the supply of regional public goods (infrastructure research and development, funding, among others), but also on specific programmes to generate regional value chains in some particular sectors and make contributions to the elimination of regional and national inequalities.

Therefore, the Latin American and Caribbean countries need to talk about the role of foreign direct investment from third countries and trans-Latin companies as well as the best ways to take advantage of their presence (formation of suppliers, contributions to R&D, training programmes, etc.) for the productive development of the region. Cooperation between public and private sectors at the local, regional and international levels might reinforce that impulse and help include undeveloped sectors (formation of suppliers, border programmes, etc.).

At present, there is the possibility for the governments of the region to explore new ways to collaborate in productive activities. In many countries there is a renewed vision of “industrial policy” – incipient in some countries and deeper in others – which has a significant potential at the regional level. While in the 1980s that term meant a direct intervention of the State in the economy and government control of significant parts of the productive apparatus, as well as a set of public actions that sought to limit the scope of the market, nowadays this concept involves a variety of policies that are implemented

## 6

by different institutional actors to encourage the creation of businesses, promote their agglomeration and foster innovation and competitive development within the context of an open economy.

Besides the horizontal instruments adopted with the Washington consensus, new production development policies are being implemented, with renewed approaches, such as the programmes to boost partnerships and strengthen SMEs; support the re-emergence of development banks, and the adoption of policies to create suppliers as well as networks of domestic and foreign producers. They are all carrying out joint activities in LAC countries, but they still have a great potential to develop.

Additionally, the chances that the countries of the region can collaborate or jointly engage in productive activities and innovation have expanded a lot thanks to the advances in ICTs. The challenge for Latin America and the Caribbean is to expand and take better advantage of connectivity. Thus far, the most important initiative in this regard is the Latin American Advanced Networks Cooperation (CLARA), created in 2004 and funded largely by the European Union, but with national contributions as well. This programme is intended to interconnect, through redClara, Latin American and Caribbean academic and research networks with GEANT, its European counterpart. For this purpose, CLARA has helped to create national research and education networks in several countries. This initiative is helping to bridge the digital divide within the region and between it and the developed world. It is generating capacities for scientific and technological collaboration in Latin America, which is essential to create an information society in the region and allow it to develop technology of its own. The role of regional organizations can also be very relevant for this effort, as in the case of ECLAC @LIS2.

Thanks to the improvements in infrastructure for ICTs, many companies have managed to grab high-tech niches, among which there are several production platforms, for instance operating systems, including microprocessors, Web search engines and media players, among other applications.

A special challenge for LAC is their traditional specialization in natural resources, which are available in abundance and represent a comparative advantage. For this advantage to make a real difference in the development of the countries in the region, this type of production must be incorporated into a more modern technological mainstream, which helps diversify production, adds value and has a more productive effect on the industry and the economy as a whole.

The challenge is not only generating knowledge and proprietary technology, but to apply it. Consider that in LAC, the ID there is not easy to become innovation and marketing them in the primary sectors.

The challenge is not only to generate knowledge and create technology, but also to implement it. It should be noted that in LAC, existing Research and Development hardly result in innovation and marketing in the primary sectors.

A joint effort by the countries in the region to create R&D centres, aimed at developing biotechnology, and laboratories focused on assessing biosecurity and food security, would be very useful, especially for smaller economies whose capacity to finance such processes is lower than that of other economies. In this connection, it is worth mentioning at least two regional experiences in Science, Technology and Innovation (STI): (1) the Mesoamerican Network for Research and Development on Biofuels (RMIDB), and (2) the Network of Research on Biomedicine of MERCOSUR.

A restriction, often pointed out by studies on technological development in LAC, is the lack of critical mass to achieve a breakthrough in Science, Technology and Innovation, even in the largest countries in LAC, such as Argentina, Brazil and Mexico (Dutrénit and Ramos, 2012). This critical mass should be generated through a greater public budget than that currently allocated by governments for R&D, so as to strengthen national innovation systems, which in turn generate more solid achievements in science, technology and innovation.

Traditional sectors are not necessarily low-technology and low knowledge-intensive sectors; they can be otherwise due to the acquisition of theoretical and practical knowledge from dominant countries, which allows for improving capabilities, establishing new routines and applying best practices.

Finally, it should be recalled that the restriction on access to intellectual property leaves some spaces that developing countries can take advantage of, especially as regards traditional knowledge. For example, in the pharmaceutical sector, upon the expiry of the patent, generic drugs can be manufactured freely. Countries must have laboratories and the necessary certifications to take advantage of these opportunities. It is also necessary to consider open-source digital programmes, which can be used by the public in general and allow for making software innovations and other useful applications.

In sum, the areas for cooperation among Latin American and Caribbean countries with a strategic vision of development, which will enable countries to make a qualitative and inclusive leap together in its economic and social performance is broader than ever. Those areas include: (i) A joint investment in infrastructure for physical and virtual integration in the region with participation of the public and private sectors; (ii) A search for cooperation with large multinational and trans-Latin enterprises so that, together, they can make greater contributions towards the creation of suppliers, training, investment in R&D, and technology transfer, among others. (iii) Implement policies for new-generation productive development at the regional level to support SMEs, while strengthening development banks and creating suppliers, in order to strengthen regional production chains; (iv) Develop regional policies which, thus far, have not been fully taken advantage of, such as encouraging backwarded regions (border areas), promoting the development of environmentally friendly products, and fostering R&D in all productive sectors.



## I. INTRODUCTION

Despite various national and regional development efforts, per capita GDP in Latin America and the Caribbean (LAC) has failed to converge with that of advanced countries over the past thirty years and the problems of inequality and poverty have not been resolved. In fact, the per capita income of the ten largest countries in LAC, on average, was less than one-third of that of the United States in 2012.<sup>1</sup>

The productive profile of the region's economies has negatively evolved towards stagnation in the service sector in terms of productivity, while the agricultural and manufacturing sectors have lost weight on GDP. At the same time, exports consist mainly of primary or intensive products with low added value, which is far from being an economic model that could be considered successful.

Hence the need to seek new ways of economic and social development for the region, and a shared productive development policy in the LAC region could be an important pillar to make progress in this new direction. The industrial policy has taken again an important role in various countries, but from a very different perspective from that played from the 1950s to the 1970s, when imports substitution and the role of the State as the main economic agent were the rule. The new industrial policy includes a broad set of policies to encourage the productive sector in very different ways, for which cooperation between the public and private sectors is crucial. Productive development cannot be separated from innovation and the development of productive efficiency within the context of an open economy.

From this standpoint, regional integration in Latin America and the Caribbean in terms of production has gained renewed interest. Greater cooperation among countries for productive development could be very positive for joint progress. At present, the issue of integration in LAC acquires relevance due to various facts: in practice, its potential has never been fully taken advantage of; the recession or stagnation in developed countries has hindered the generation of a substantial economic boost; and Asian countries – particularly China – are growing at a slower pace, thus weakening the demand for LAC products. Meanwhile, there are favourable conditions to deepen integration beyond trade, thanks to the advances in various technologies, infrastructure and transport, and to the renewed strength of Latin American and Caribbean markets, as a result of the increase in population and the broad expansion of its middle class.

Since the external opening in the 1980s, LAC countries have intensified trade among themselves. Intra-regional trade peaked between 1990 and 1997 within the Common Market of the South (MERCOSUR), the Andean Community (CAN) and the Central American Common Market (CACM). In the first two cases, trade multiplied by 5 and 4.2 times, respectively, during that period (Ocampo 2001). In addition, intra-regional trade involved products with greater added value than those exported to third countries. But, as has been the case with the rest of the world, trade within the region by itself has not led to the expected results in terms of productive development. Moreover, the most backward countries in the region have not been able to bridge their gaps with respect to their more developed partners in Latin America.

This study suggests that it is worth considering options for production that could have deeper and longer-lasting effects on the countries' development, and that, in this regard,

---

<sup>1</sup> UNDP, <https://data.undp.org/dataset/GDP-per-capita-2005-PPP-/navi-mdqZ>.

greater productive and technological integration could make a valuable contribution. In a world where technological innovation has become a very important engine for the economies, it is suggested that closer collaboration among the countries of the region in the area of Research and Development could lead to a better use of the scarce resources owned by individual countries, so that they could achieve technological progress based on a shared effort. Generally speaking, it should be considered that natural resources, manufactures and services would gain in terms of value added, without neglecting less sophisticated technological advances required by local producers.

This document starts by analyzing selected indicators on structural changes in Latin American and Caribbean economies and their dynamism in recent decades, the incorporation (or lack thereof) of technology into exports, as well as sectoral productivity. Secondly, it deals with regional commercial and productive integration, taking into account the issue of asymmetries and the role of Foreign Direct Investment (FDI), especially those investments carried out by the "trans-Latin" companies (or *translatinas*). The document goes on to focus on the productive development policies in the region, with special emphasis on new policies aimed at Small and Medium-Sized Enterprises (SMEs), the re-emergence of development banks and the creation of suppliers. The following section contains an analysis of the challenges facing the region in terms of technological innovation. Finally, some conclusions and tentative regional policy proposals are presented.

## **II. CHARACTERISTICS OF LATIN AMERICAN AND CARIBBEAN ECONOMIES AND TRANSFORMATIONS DURING THE PERIOD 1990-2011**

The countries of Latin America and the Caribbean have very heterogeneous features in terms of the size of their economies, their per capita income, territorial extension, income distribution, institutional structure and their business climate, among many other aspects. These economies have posted a slow economic growth in the past 21 years and their productive structure has favoured the services sector, which shows a deficient performance in terms of productivity.

### **1. Evolution of GDP, productive structure and productivity**

Despite the large asymmetries among the region's countries, some generalizations can be made when observing the evolution of Latin America with a long-term vision, with the exception of the Caribbean. The official statistics show that GDP in Latin America reached a 3.2% average annual growth rate between 1990 and 2011, that is to say, much lower rates than those reached by countries such as China, India, Korea, among others. The Caribbean reached a 2.4% GDP average annual growth rate, lower than that of Latin America and the Caribbean as a whole. It should be noted that Caribbean economies are highly vulnerable: their geographic location causes isolation; they feature high vulnerability to natural disasters, security weakness, and dependence on external capital. In addition, these economies are price-takers, lacking the ability to establish their own rules to insert themselves into globalization. (ECLAC, 2011a). It is evident that economic reforms carried out during the period of trade openness did not have a satisfactory performance for the countries of the region.

The GDP structure of Latin America and the Caribbean during the period 1990-2011 shows a strong predominance of the service sector, which accounted for 56% of total GDP during the mentioned period (with commerce generating 14%, financial sector 16%, and health, education, security and defence items, as a whole, 18.2%); followed by the secondary sector,<sup>2</sup> accounting for 32% of total GDP (the manufacturing industry stands

---

<sup>2</sup> The secondary sector comprises: Oil, Manufacturing, Construction, Power Generation, Gas and Water Supply.

out, accounting for 17%), followed by the oil sector with 7.5%, the mining sector with 7%, and agriculture with 5% (See Table 1).

**TABLE 1**  
**Average productive structure and structural change: 1990-2011**

Average productive structure, 1990-2011 (%)											
	Agric.	Mining	Oil	Manu- facture	Gas / Power	Construc- tion	Services	Tourism	Finance	Communi- cations	Total
Latin America and the Caribbean	5.0	6.7	7.5	16.6	2.3	5.8	55.7	2.9	15.8	14.3	99.7
Latin America	5.0	6.6	11.0	16.8	2.3	5.0	53.0	2.8	15.7	14.0	99.7
The Caribbean	4.3	15.0	0.0	7.1	2.1	6.6	64.0	11.8	16.9	18.2	99.1

Percentage change in productive structure, 1990-2011											
	Agric.	Mining	Oil	Manu- facture	Gas / Power	Construc- tion	Services	Tourism	Finance	Communi- cations	
Latin America and the Caribbean	-0.5	-0.8	10.1	-2.2	0.2	-0.5	2.1	-0.1	1.0	0.1	
Latin America	-0.5	-0.9	10.1	-2.3	0.2	-0.5	2.2	-0.1	1.0	0.1	
The Caribbean	-3.9	10.1	0.0	-2.4	0.4	-1.1	-2.8	0.1	3.4	-2.5	

Source: <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>.

During the period under study, a relevant change in the productive structure was recorded in Latin America (but not in the same sense as in the Caribbean). That is to say, the share of the service sector increased 2%,<sup>3</sup> while the presence of the secondary sector shrank, with the manufacturing sector posting the worst results (-2%). Meanwhile the oil sector registered its greatest loss in its share of GDP (-10.1%). The mining and agricultural sectors also retreated (-0.8% and -0.5%, respectively).<sup>4</sup>

Although the productive structure of developed countries has also changed for the benefit of the service sector, in general, it entails a structural change in favour of the most productive sectors. The contrary occurs in Latin America and the Caribbean, where there is still low productivity in the service sector. The manufacturing sector has been and will continue to be a boosting agent for economy and employment because it can generate chaining, as proved by the case of Southeast Asian countries. This does not mean that specialization in primary products is not a viable option for some countries, if at the same time progress is made with technological advances, productivity, and with the necessary achievement of higher value added and productive diversity.

Taking into account the asymmetries among the countries of Latin America and the Caribbean that were already pointed out, they will be divided into four categories: very small countries,<sup>5</sup> small countries,<sup>6</sup> medium-sized countries<sup>7</sup> and large countries,<sup>8</sup> according to their GDP size (see Table 2).

<sup>3</sup> This is the result from an increase in transport, trade and the financial sector, along with a sharp decline in the public administration.

<sup>4</sup> The primary sector raised its share in the Caribbean due to a remarkable increase in the mining sector's share in the GDP over the past four years.

<sup>5</sup> The average annual GDP of this group amounts to up to US\$ 10.999 billion from 2001 to 2010: Antigua, Barbados, Bahamas, Dominica, Grenada, Guyana, Haiti, St. Kitts and Nevis, St. Vincent and the Grenadines, St. Lucia and Suriname in the Caribbean; Belize, Nicaragua and Honduras in Central America; Bolivia and Paraguay in South America.

<sup>6</sup> The average annual GDP of this group ranges from US\$ 11 billion up to US\$ 80 billion in the last ten years: Jamaica, Trinidad and Tobago, Dominican Republic, Cuba, El Salvador, Panama, Costa Rica, Guatemala, Ecuador and Uruguay.

<sup>7</sup> The GDP of this group ranges from US\$ 86 billion to US\$ 200 billion: Colombia, Chile, Peru, Venezuela and Argentina.

<sup>8</sup> Their average annual GDP surpasses US\$ 800 billion: Mexico and Brazil.

## 12

The group with the smallest economies features considerable variations in its institutional environment and its growth experiences, as noted in a recent paper (ECLAC, 2011b). Its dynamism in GDP growth was inferior to that of Latin America and the Caribbean between 1990 and 2011 (2.6%).<sup>9</sup> The manufacturing sector share in the region's manufacturing GDP was barely 9%. This group is made up by 16 countries, which can be subdivided into two categories: those countries whose predominant exports are manufactures and those countries that export agricultural products or a certain mineral (*commodities*). Regardless of their specialization, they are very open economies given their limited domestic market, which for some of them can result in increased foreign trade shares.

**TABLE 2**  
**Productive structure of Latin America and the Caribbean by GDP size: 1990-2011 (%)**

	Agri- culture	Mining	Manu- facture	Cons- truction	Tourism	Trade	Trans- port	Finance	Health Sector. Def.	Others	TOTAL
<b>Very small</b>	7.7	2.6	9.0	2.8	4.3	16.8	9.3	15.8	18.2	12.9	100.0
<b>Small</b>	8.3	5.8	14.6	2.1	1.9	17.0	8.2	14.4	18.6	9.1	100.0
<b>Medium- sized</b>	6.2	12.9	16.3	2.3	2.2	12.4	6.9	14.9	17.3	8.6	100.0
<b>Large</b>	10.5	4.7	16.9	2.3	1.3	14.7	7.5	16.6	16.5	9.2	100.0

Source: <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>.

The group of small economies showed a better economic performance during the period under study: Their average annual GDP rate reached 4%, a higher rate than the whole region's rate. Even though they share some of the problems mentioned above, their economies feature greater diversification, mainly in the agricultural and manufacturing sectors; and in Panama's case, in the service sector, particularly in the transport and financial intermediation industries.

The medium-sized economies group has also a 4% average annual GDP rate. Except for Venezuela, the remaining countries of this group – Argentina, Colombia, Chile, and Peru – recorded GDP growth rates over the average. Argentina has the most diversified economic structure, featuring relatively important agricultural, livestock and manufacturing sectors. For the other three countries, the share of the mining sector (including oil) is over the Latin American average.

Finally, Brazil and Mexico, classified as large economies, feature a diversified productive structure, with a manufacturing sector with cumulative experience and higher added value than small and medium-sized economies. Brazil recorded a 3.1% growth rate in the total 21-year period analyzed, and a 3.6% growth rate from 2000 to 2011, both rates near the average for that period. In turn, Mexico recorded a 2.6% annual growth rate in the total 21-year period from 1990, but it shrank to 2% annually during the period 2000-2011. Nevertheless, Mexico records a higher average rate of GDP growth (3.1%) between 1990 and 2000, the period in which the Free Trade Agreement (FTA) with Canada and the United States of America (U.S.) was signed. That period also coincides with the economic boom in the U.S. (although that also made Mexico more vulnerable to the 2001-2002 recession and the U.S. financial crisis, which explains why its growth was one of the lowest in Latin America).

<sup>9</sup> Only five out of 16 countries in the group with very small economies recorded a GDP growth over the Latin American average: Guyana, Nicaragua, Honduras, Belize and Bolivia.

In brief, the small and medium-sized countries recorded a better performance in terms of GDP growth, in comparison with the very small and large countries.

Another important subject to understand the performance of Latin American and Caribbean countries is the productivity of their economies. Overall, and despite their structural heterogeneity, it can be asserted that in Latin America and the Caribbean, productivity increases in their most modern sectors have not managed to spread throughout the economies. Indeed, the growth of this indicator was very low in the period 1990-2011. Still, the indicator improved in comparison with the period 1975-1990 (Pages, 2010).

In Latin America and the Caribbean, the agricultural sector has experienced the greatest increase in productivity. Between 1990 and 2005, there was an annual average increase of 3.5% in productivity in this sector, which had grown 1.8% annually between 1975 and 1990. In that period, the debt crisis and the lost decade stressed the stagnation of productivity in Latin American and the Caribbean. For its part, industrial productivity during the first period grew 0.9%, and 2% in the second period. Finally, productivity in the service sector shows the worst scenario, with a -1.8% negative growth between 1975 and 1990, and a state of stagnation in this variable (0.1%, annual rate) between 1990 and 2005 (Pages, 2010). According to a recent IMF study, these trends have persisted in the three sectors in the region between 2005 and 2008. (Dabla-Norris, et al, 2013).

If a comparison is made between the productivity growth rate in Latin America and the Caribbean with respect to that of the United States, all LAC countries show quite inferior annual growth than that of the U.S., except for Chile (and more recently Costa Rica), even though they had a much lower level of productivity as a departure point. For this reason, the vast majority of countries in the region are increasing their gap in terms of productivity with respect to the U.S. The IDB study indicates that China registered a progress of 219.4%; Hong Kong, 136.1%; Hungary, 131.9%; and Singapore, 102.8% with respect to the United States (Pages, 2010). In the period 2000-2008, Asian countries increased their productivity at a rate at least three times greater than that of Latin America and the Caribbean, and this indicator was more dynamic in the industrial sector (Dabla-Norris, et al, 2013). It should be noted that behind these averages there are huge differences at the microeconomic level. A duality in the economy persists, as reflected in the productivity gaps among companies and industries or among sectors and regions in countries.<sup>10</sup>

In summary, as it has been observed, Latin American and Caribbean economies have had a weak dynamics in terms of economic growth over the last 21 years, and the productive structure has changed for the benefit of the service sector, which shows the most negative performance in terms of productivity. This change is probably due to the fact that the service sector has become a recipient for informal employment in low value-added activities. Hence, despite the modernization that the service sector might have gone through in terms of financial intermediation, transports and telecommunications, and despite the establishment of new service niches, such as business services, all of this has not managed to offset the performance of the broad, low-productivity service sector. Without a doubt, the diminished role of the primary and secondary sectors, and the substitution of workforce by the new technologies used in the agricultural and manufacturing sectors have contributed to this situation.

---

<sup>10</sup> For instance, in 2003, in Mexico, labour productivity in a large enterprise was four times higher than that of a small or a micro enterprise (Brown & Domínguez 2010).

## 2. Foreign trade, exports specialization and levels of technological sophistication

An analysis of the performance of the Latin American and Caribbean countries in foreign trade following the aggregate approach reveals very different situations. Between the years 1990 and 2000, Latin American and the Caribbean saw a swift growth in exports, an average 8.1% per year, but it grew only half that figure in the period between 2000 and 2011. The flow of exports was more dynamic in the first period because it coincided with a boom in the North American and European economies, but it lowered considerably in the following decade because of the September 11 recession and the 2008-2009 financial crisis. However, several South American countries had a good exporting performance with China in the second period, especially with primary products.

Imports, for their part, have grown rapidly, even more than exports, as shown in Table 3.<sup>11</sup> This phenomenon reflects the process of globalization of the Latin America and the Caribbean, helped by the fragmentation of the productive processes of the large transnational enterprises and trade openness that has reduced transaction costs and favoured the search for external suppliers in countries with lower costs. This has generated a growing trade of intermediate goods, which, in turn, has resulted in the disintegration of production chains in the countries of the region, especially in those that had been able to build up an industrial sector. Besides, imports of final consumer goods rose.

**TABLE 3**  
**Exports and Imports Annual Growth Rates, 1990-2011**

	Exports %			Imports %		
	1990-2000	2000-2011	1990-2011	1990-2000	2000-2011	1990-2011
Latin America and the Caribbean	8.0	4.0	5.9	10.4	6.2	8.1
Latin America	8.1	4.2	6.0	10.5	6.3	8.3
the Caribbean	5.0	....	....	6.4	5.7	5.7

Source: <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>.

Considered as a whole, the Latin American and Caribbean countries do not seem to show an enormous difference in their exports and imports ratios as a proportion of the gross domestic product (GDP) (Table 4). Still, when analyzed according to their size – very small, small, medium-sized, and large countries – the very small ones appear particularly vulnerable in the external front, with a 34.4% export/GDP ratio and a 50.3% import/GDP ratio; the small countries, with a 21% export/GDP ratio and 38.3% import/GDP ratio, also have a significant gap. The big ones show almost identical export and import on GDP ratios (16.6% and 17%, respectively), while the medium-sized ones have reached the best external position, with an export/GDP ratio of 28.1% and an import/GDP ratio of 20.2%.<sup>12</sup>

Meanwhile, the very small countries – the best integrated to the international market – had the lesser annual export growth rate between 1990 and 2011. This means 4.4% compared to the 7% hit by the other countries in the group. At the same time, this group gathers the countries with the slowest GDP expansion. The group of countries with the best external performance are the medium-sized ones, which have no external gap and enjoy a good export growth rhythm. They also show a high growth rate in the GDP (4.2% annually), and predominantly export product based on natural resources (Table 4).

<sup>11</sup> Data for the Caribbean are incomplete.

<sup>12</sup> The countries with the best exporting orientation are Chile and Peru.

**TABLE 4**  
**Economic performance indicators: Annual Growth Rate of GDP and Foreign Trade, and share in GDP according to LAC countries' size, 1990-2011**

	GDP	EXP	EXP/GDP	IMP	IMP/GDP
Very small	2.6%	4.4%	34.4%	6.0%	50.3%
Small	4.0%	7.2%	21.0%	6.3%	38.3%
Medium-sized	4.2%	7.2%	28.1%	10.0%	20.2%
Large	2.9%	7.3%	16.6%	9.0%	17.0%
<b>Latin America and the Caribbean</b>	<b>3.2%</b>	<b>8.0%</b>	<b>20.3%</b>	<b>8.1%</b>	<b>19.4%</b>

Source: <http://websie.eclac.cl/sisgen/ConsultaIntegrada.asp>.

The development strategy for the two last decades in the Latin America and the Caribbean is visible in the composition and destination of their exports (Table 5). The composition of exports mainly rests on the natural resources: extractive and farming industries, which in the last few years have obtained a growing demand from Asia. Out of the total exports from Latin America and the Caribbean, 39% consists of primary products, and 19% are manufactures based on natural resources (all combined, they total almost 60% of all exports). The exports of manufactures of low and medium technology account for seven and 20%, respectively, and only 10% are of high technology<sup>13</sup> (Chart 1).

An examination of the countries that receive Latin American and Caribbean exports shows considerable differences in their composition. The United States, the main importer of goods from the region – it received 35% of them in 2011 – demanded mainly high and medium technology goods (21% and 30%, respectively), and primary products and natural resources-based manufactures (25% and 12%, respectively) (Chart 2). Second are the Asian countries (27%), which have received an enthusiastic flow of exports in the last decade; however, they have been chiefly primary products (67%) and natural resources-based manufactures (22%). Together, these two groups of products make up almost the total of these exports (Chart 3). The third most important destination of exports are the Latin American countries (19%), where mostly medium technology manufactured products (32%) are sent, followed by primary products (24%) and manufactures based on natural resources (22%) (Chart 4). Next comes the European Union (12%), with exports of primary goods, medium technology products and natural resources-based manufactures. Considering the countries whose exports are more than 40% primary products, only 1% of their exports are high technology manufactures. Surprisingly, Brazil is among these countries although this type of exports may be of a very high level of technology, such as those produced by the aeronautic industry. However, the countries not specialized in primary products – their exports of this type do not reach 40% – are not big exporters of high technology manufactures, which cover only 13% of their total sales abroad (Table 5).

<sup>13</sup> Four percent of total exports fall under the classification "Other transactions".

**TABLE 5**  
**Latin American and Caribbean exports by destination and type of product**  
**Millions of dollars\***

	LAC	U.S.	EU	Asia	China	Japan	Total	Avg.	1	2
Primary Products	44704	82999	59825	103198	57877	18941	374766	39%	59%	17%
Natural resources-based manufactures	40610	40255	26916	33847	19316	2737	185578	19%	23%	22%
Low technology manufactures	23357	31411	4861	2590	923	179	64848	7%	5%	21%
Medium technology manufactures	58673	101178	15025	10142	3174	1461	196264	20%	6%	21%
High technology manufactures	15146	68581	5454	3954	1420	578	99829	10%	1%	13%
Other transactions	2453	10336	3559	366	200	20	42472	4%	6%	6%
<b>Total exports</b>	<b>184808</b>	<b>334716</b>	<b>115081</b>	<b>153882</b>	<b>82771</b>	<b>23918</b>	<b>961680</b>	<b>100%</b>		
<b>Total exports by destination (%)</b>	<b>19%</b>	<b>35%</b>	<b>12%</b>	<b>16%</b>	<b>9%</b>	<b>2%</b>	<b>93%</b>			

Source: <http://www.cepal.org/comercio/SIGCI/>.

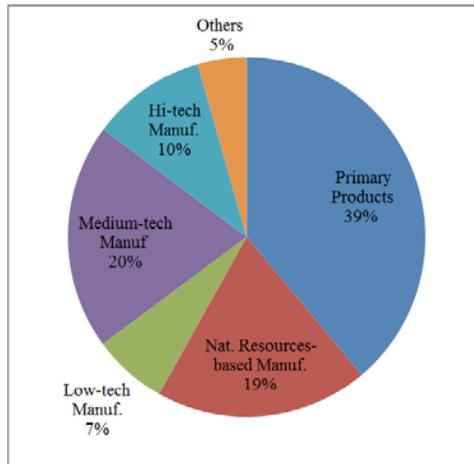
\* Asia and the European Union did not report about some countries; therefore the sum of partial data does not add up to 100%.

1: Countries whose primary products exports account for 40% or more of total exports: Guyana, Saint Vincent, Argentina, Honduras, Brazil, Uruguay, Nicaragua, Venezuela, Belize, Paraguay, Ecuador and Bolivia.

2: Countries whose primary product exports account for less than 40%: Saint Kitts, Cuba, Antigua, Barbados, Panama, El Salvador, Dominica, Haiti, Mexico, Bahamas, Costa Rica, Dominican Republic, Grenada, Trinidad and Tobago, Chile and Guatemala.

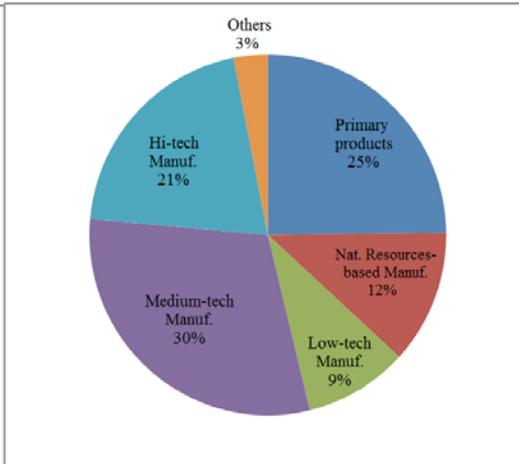
Such results suggest that there is an integration of Latin America and the Caribbean to the global value chains, especially with the United States, its largest commercial partner. While high technology exports to the United States are mostly of assembled manufactured products, Latin America and the Caribbean have also made technological advances in their contribution to the value chains, mainly in the automobile and aeronautic industries. At the same time, Latin America and the Caribbean are primary exporters to the Asian countries, their second commercial partner. Non-natural resource intensive manufactures lead exports within the region (which is the third biggest partner), followed closely by primary products and manufactures based on natural resources. This confirms that the regional exchange adds more value than the average exports from Latin America and the Caribbean, but the high technology exports are less numerous.

**CHART 1**  
Composition of total exports



Source: Table 5.

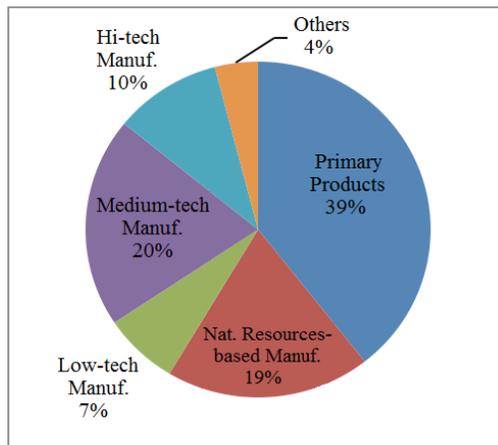
**CHART 2**  
Composition of Exports from LAC to the U.S.



Source: Table 5.

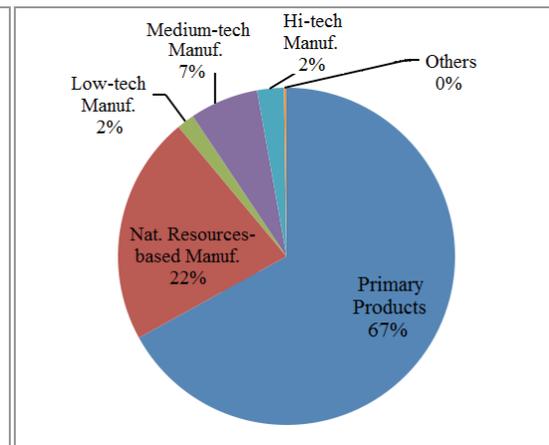
In conclusion, Latin America and the Caribbean had an irregular performance in the external sector over the period 1990-2011, with a marked dynamism in their exports during the first decade and a deep slowdown during the second, and imports going in the opposite direction. Combined with an imports ratio higher than the exports ratio in two of the four groups of countries studied, this resulted in a negative external deficit for a considerable part of the region. The smallest countries are the most vulnerable regarding these indicators.

**CHART 3**  
Composition of exports to LAC



Source: Table 5.

**CHART 4**  
Composition of exports from LAC to Asia



Source: Table 5.

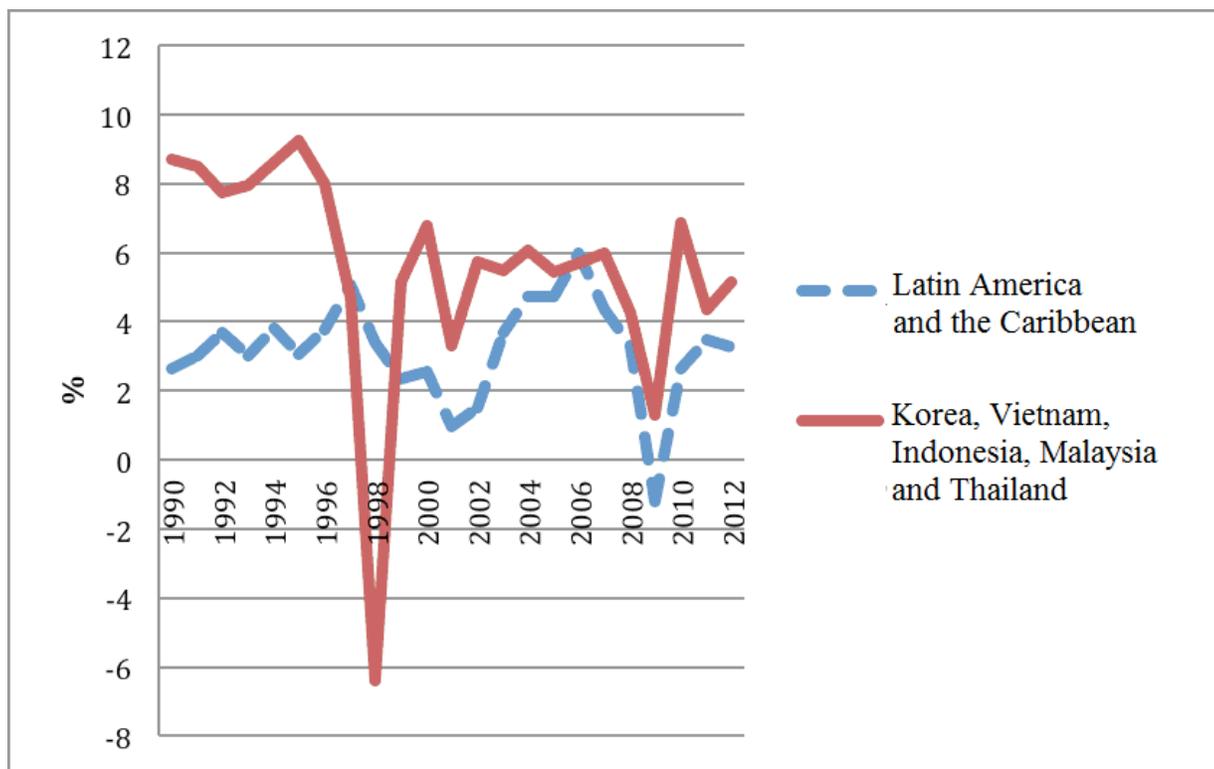
Additionally, the exports specialization developed by most countries of the region is focused on the sector of raw materials and, to a lesser extent, medium technology products. But adding primary and raw material intensive products, they reach almost two-thirds of the total exports of the region, with high technology exports covering only one-tenth of that total. The Latin American and Caribbean countries are apparently having a wider participation in the international value chains with the United States than with countries of the same region in the manufacturing industry.

**3. Comparison between the investment and productive structures in Latin America and the Caribbean and the countries of Southeast Asia**

The economic performance of Latin America and the Caribbean, measured in terms of GDP growth, has been deficient in comparison with the economic performance of China, India, and some countries in Southeast Asia like Korea, Malaysia, Indonesia, Thailand, and Vietnam (5.7%), despite the fact that these countries suffered a major downturn in 1997 with the Asian economic crisis, from which they recovered pretty quickly. Later on, these countries were less affected by the 2008-2009 financial crisis than Latin America and the Caribbean (Chart 6).

The possibility for the countries of the region to make technological progress up the value chain, to improve productivity, generate better jobs and bridge the gap with developed countries largely depends on the portion of GDP that they invest; and that is the first point to note about this comparison. Indeed, economic growth in Southeast Asian countries was fuelled by a high investment rate (30.6% of GDP),<sup>14</sup> while in Latin America such rate was 7% lower (in 2010), according to World Bank data.

**CHART 5**  
**Economic Growth: Latin America and the Caribbean and Southeast Asia**



Source: <http://databank.worldbank.org/ddp/home.do>.

Secondly, the five Southeast Asian countries selected for the analysis have undergone structural changes that oppose that observed in Latin America and the Caribbean. In the former the share of manufacturing activity in the GDP rose from 22 to 27% between 1990 and 2010, together with a rate of GDP growth of 6.3% each year (Chart 6). Meanwhile, Latin America and the Caribbean suffered a deindustrialization in that period, as demonstrated in the first section.

<sup>14</sup> Note that China invested 48% of its GDP during the same period.

**TABLE 6**  
**Economic performance indicators in selected Southeast Asian countries:**  
**1990-2010**

	AAGR/ GDP	Manuf./ GDP	AAGR/ Manu	F. Cap/ GDP	Imp/ GDP	AAGR/ Imp	Exp/ GDP	AAGR/ Exp
Korea	5.4	27.3	6.4	32.3	35.0	9.1	36.6	12.3
Thailand	4.8	32.2	6.4	30.9	54.6	5.6	57.1	7.8
Vietnam	7.3	17.9	9.8	30.1	60.6	15.5	52.9	15.9
Malaysia	6.1	27.9	6.2	28.7	88.0	8.0	100.7	8.0
Indonesia	5.0	25.7	5.2	26.6	27.0	6.1	30.9	6.5
<b>Weighted average</b>	5.3	27.3	6.3	30.6	42.4	8.2	45.2	10.4

Source: <http://databank.worldbank.org/ddp/home.do>.

A third feature taken into account was the leadership in the exports orientation (on average, 45.2% of GDP between 1990 and 2010), with a 10.4% annual growth, in Southeast Asian economies. Their imports level soared, but they reached a lower rate (8.2%) and an average 42.5% of the GDP. In other words, the imports ratio remained lower than the exports ratio. This suggests a greater share of their exports in the GDP, especially in manufacturing, which is the base of their exports (Table 6). As shown in the first section, a large part of Latin America has been facing a huge external deficit.

Fourthly, in Southeast Asia the importance of the manufacturing sector is one of the main causes of the rise in productivity, given both its intrinsic effect and its steady capacity to generate employment. An ECLAC study (2007) remarks that the "catching-up" process in the industrial sector productivity has been deeper in Asia than in Latin America and the Caribbean. In Asia, the commercial services sector manages to increase its labour productivity without much growth in the volume of employment,<sup>15</sup> which generates a virtuous circle between the growing industrial dynamism and the modernization of the service sector. This outlook contrasts with that of the services sector in Latin America and the Caribbean, previously analyzed.

In other words, in Asia, the industrial sector performs a qualitative and quantitative function: The enterprises bridge the productive gap and gain external competitiveness; this allows them to export increasing added value products and generate a significant number of good quality jobs (ECLAC, 2011a). Under these conditions, the industrial wage bill expands the domestic market and supports the dynamics of the service sector. In the Asian economies, outsourcing complements the industrialization process, while in Latin America and the Caribbean, the increasing burden of services actually reflects the incapability of the manufacturing and primary sectors to reach a sufficient level of competitiveness and markets.

Finally, the most important difference between the successful experiences of the Asian (a wider universe than just the Southeast Asian region) and Latin America is that the former managed to accomplish a clear transition towards the capacity to generate knowledge,

<sup>15</sup> However, the authors of the study underline that this increase is lower than the increase in industrial productivity.

whereas this process continues to be slow in the latter (ECLAC, 2007). The expenditure of Latin American countries on research and development activities has been traditionally low. According to World Bank figures,<sup>16</sup> the countries of Latin America and the Caribbean spent an average of 0.83% of the GDP in research and development in 2010. Only Brazil reached 1.16% that year, followed in the distance by Argentina (0.5%), Costa Rica, Mexico and Uruguay (between 0.4 and 0.5). In contrast, South Korea invested 3.74% of its GDP in research and development that year; China, 1.76%, and Malaysia, 1.07%.

As Katz (2007) puts it, the Achilles heel of Latin American economies is precisely their relatively low level of productivity and the fact that the pace of technological change is neither enough nor properly distributed throughout the productive structure (regions, types of enterprises, industry sectors), which does not allow the economy's average productivity as a whole to progressively approach to that of the developed world.

From the 1990s on, the new, opening model adopted by the Latin American and Caribbean economies favoured the import of technology over the efforts to adapt and generate technology on their own. This policy, particularly in the 1980s and 1990s, went as far as dismantling and selling laboratories or technological divisions in public or private enterprises to transnational companies.

Katz (2007) remarks that technological efforts in Latin America and the Caribbean do not have a scale or depth, both in terms of "inventive height" and the amount of resources that firms allocate for that purpose. The region's enterprises, therefore, are truly interested in exploring the universal technological frontiers, seeking for newest processes or products, and allocating the required amount of resources. The causes of this little inclination towards innovation include the lack of an adequate incentive regime and the absence of public goods and public-private coordinating efforts that motivate the private sector to go in that direction (see Chapter 4).

Although the economic models of the Southeast Asian countries analyzed are not easily applicable to another country – especially considering the large number of factors intervening in a development process – elements such as the role of investment in the economy, the deployment of research, development and innovation activities, the role of the manufacturing industry and the positive synergies with the service sector, should be important reference points to Latin America and the Caribbean.

### III. REGIONAL INTEGRATION

#### 1. Background

In practice, much of the efforts of countries to become more integrated into the global and regional economy have aimed at trade liberalization. This trade liberalization, particularly since the 1980s, drove the aspiration to achieve a "new" type of regionalism, originally called "open regionalism" by ECLAC. This approach, besides striving to have a closer economic relation among Latin American countries, hoped that by doing it in a situation of greater openness towards third countries, and a greater deregulation, would reduce transaction costs and improve the competitiveness of their exports worldwide. This perspective included a transformation of production with equity, stressing the importance of technological innovation and its transmission to the region, to help foster economic growth and improve the social conditions of the poorest sectors (ECLAC, 1994).

---

<sup>16</sup> World Bank, <http://data.worldbank.org/topic/science-and-technology>. Consulted on 15 March 2014.

Trade liberalization, whether through regional and subregional integration agreements, FTAs, or unilateral openings due to multilateral trade commitments (mainly with the WTO), resulted in a great increase in exports, including those destined for the region itself.

However, intra-regional trade reached somewhat more than 20% of total trade, while at the subregional level it amounted to 25% (ECLAC, 2009).

In addition, the increased trade has not resulted in what was expected of "open regionalism," which was aimed at bridging economic and social gaps among the countries in the region and within them. The increased trade has been asymmetric between some advanced countries and those still lagging behind in the region, generating significant trade deficits of the latter with the first group of countries. It has aggravated inequalities rather than reducing them.

These asymmetries reflect unequal production capacities in the manufacturing sectors, but they also are a sign of the heterogeneous factor endowment of countries, which requires an intense commercial exchange of raw materials or natural resource-intensive products among them, including natural gas, crude oil, non-milled wheat, soybean oils, soybean cakes, copper and its alloys, corn, steel ingots and bars, soy beans, alloys, among others (ECLAC, 2009).

## **2. Intra-regional trade, productive integration and asymmetries**

There are some elements that are positive and support a wider regional integration. They might therefore become the origin of the solution of asymmetries.

They include, first of all, investments in infrastructure, the simplification of customs procedures (such as the establishment of single windows for foreign trade, the automation of customs paperwork, etc.), and improvements in transportation. Although these efforts have been made mainly to support intra-regional trade, they are essential for joint production and the integration of production chains in Latin America and the Caribbean. Within the shared infrastructure, we should as well consider the effect of the revolution of the information and communication technologies, which, by building up advanced networks, allows the countries to interconnect and coordinate joint production processes. The public-private alliances have proved to have a crucial importance in strengthening the regional infrastructure of all types.

The achievements made by the Mesoamerica Project (MP) are a good example. This project includes the Mesoamerican Road Integration Corridor, on the Pacific side (where 95% of the land freight is transported), the Electrical Interconnection System for Central America (SIEPAC); the electrical interconnection between Panama and Colombia, and between Mexico and Guatemala; and the Central American Optical Fiber Network (REDCA), which is expected to help build, among others, the Mesoamerican Information Highway (AMI).<sup>17</sup>

A second factor stimulating integration consists of the investments of big Latin American companies in other countries of the region (the so-called trans-Latin firms). Investment areas are very diverse: Infrastructure, services (banking, supermarkets, telecommunications, etc.), and manufactured products (chemicals, petrochemicals, all types of food, beverage, textiles, electronics, services, and others). This type of investment has grown rapidly in recent years: In 2010, it covered 10% of the foreign direct investments received by Latin America and the Caribbean (see Box 1).

---

<sup>17</sup> The initiative for the integration of the regional South American Infrastructure (IIRSA), known currently as the South American Council for Infrastructure and Planning (Cosiplan) of Unasur, and the Mesoamerica Project are also very important for development of infrastructure in the region.

Moreover, the investments made by transnational firms with plants in various countries of the region – which usually concentrate on certain points in the value chain, particularly in the automobile and electronic industries – also help to further integrate the region in terms of production of goods and services. This increased production activity, displayed by the regional or transnational private enterprise, contributes as well in the exchange of relatively sophisticated products. This is evident in the technological rise of some products and services exchanged within Latin America and the Caribbean.

One example is the investments made by IBM, which has become a conglomerate in Latin America and the Caribbean, as it operates in several countries and in several industries. IBM and EBX Brazil have signed an agreement to purchase 20% of one of its suppliers, SIX Automacao (a firm specialized in mining, hydrocarbon extraction, and shipyards). IBM will help generate integrated operations in oil and gas, with the purpose of extending the life of oil reservoirs, and reducing costs; IBM will also create a new technological solutions centre for industrial sectors that will serve Brazil, Chile, Colombia and Peru.<sup>18</sup> Furthermore, the firm is betting on Brazil's development potential: It installed its ninth global research laboratory in South America in 2010.

This phenomenon is especially notorious at a sub-regional level, with exports in the automobile industry (passenger and transportation vehicles, and auto parts), chemicals, plastics, petrochemicals, electronics (ECLAC, 2009). In 2008, more than 80% of the intra- and sub-regional trade between MERCOSUR, CAN, CACM and CARICOM were manufactured products, and the intra-industrial trade between multinationals translated into about one fourth of the exchange of products between three of the sub-regions, MERCOSUR, CAN and CACM (ECLAC, 2009). This is the case of the most important sectoral trade, the automobile industry, and maybe a significant portion of the trade of chemicals and pharmaceuticals. This intra-regional trade is, at least partially, an example of a value chain of large multinationals within Latin America and the Caribbean, though it is actually incomplete, since the links of the most sophisticated technology are outside the region.

Latin America and the Caribbean have become more and more attractive to trans-Latin investment as the region offers a much more solid market after the enormous consolidation of the middle class (Franco, Hopenhayn and León, 2011). Transnational companies are also partially profiting from this market (especially Mexico and Brazil), but, in general, they envision to manufacture products for the global value chains and could compete in all international markets.

Other experiences include totally local public and private companies that have been able to integrate regionally, such as the textile chain established by Bolivia, Cuba and Venezuela. Bolivia initially created the firm ENATEX and developed their first trademark, ERES, which found its complements in the companies Grupo de Industria Ligera, from Cuba, and Conglomerado Textil, from Venezuela. ENATEX is responsible for training the workers of the other two companies, and they develop products of the chain in each country (Ministry of Productive Development and Plural Economy of Bolivia, 2013)

A third source of regional integration consists of the specific and usually sub-regional programmes where the public and private sectors take part. The Production Integration Program of MERCOSUR of 2008<sup>19</sup> includes programmes to develop suppliers in the oil and

---

<sup>18</sup> [biobiochile.cl/2012/04/12/ibm-se-abre-paso-en-negocio-de-recursos-energeticos-en-america-latina.shtml](http://www.biobiochile.cl/2012/04/12/ibm-se-abre-paso-en-negocio-de-recursos-energeticos-en-america-latina.shtml).

<sup>19</sup> Mercosur/CMC/DEC. N° 12/08, on line, <http://www.sice.oas.org/trade/mrcsrs/decisions/dec1208s.pdf>,

gas sector, the Executive Group for Automotive Chain Production Integration (GEIPA), the Tourism Routes Programme, the MERCOSUR Programme of Business Articulation for Production Integration, the naval sector, and the MERCOSUR Competitiveness Forum on the Audiovisual Productive Chain.

The purpose of this programme is to jointly develop new competitive advantages based on the complementation between countries, deepening specialization within each industry. It also supports the integration of small and medium-sized enterprises in general and of enterprises in small economies in particular, into regional production processes, trying to reassign production resources to reach their objectives.

A fourth way to stimulate regional productive integration and overcome asymmetries are the programs designed and financed by governments of the countries of the region. The Fund for Structural Convergence of MERCOSUR (FOCEM) (Decision 18/05, 2005) was designed to reduce the asymmetric conditions between the different regions of the bloc, so that the benefits of integration are more equitable for the partners. This initiative is responsible for financing projects that benefit the growth of the more undeveloped areas of MERCOSUR.

FOCEM will be in force for 10 years, during which the Member States must contribute US\$ 50 million the first year, US\$ 75 million the second year, and US\$ 100 million from the third year onwards. Contributions must be differentiated, according to the level of development of the country, and the use of the funds is defined as follows: The funds are not reimbursable, and member has access to them according to this pattern: Paraguay, 48%; Uruguay, 32%; Argentina and Brazil, 10% each. The areas of the project are: Structural Convergence Programme, Competitiveness Development Programme; Social Cohesion Programme, and Programme to Strengthen the Institutional Structure and the Integration Process (FOCEM, 2007).

The other subregional integration agreements, the Andean Community (CAN), the Central American Integration System (SICA) and the Caribbean Integration Agreement (CARICOM), have expressed their concerns on regional inequalities, and have created several types of integration programs. The subregions have also had the support of the European Union (EU), the Inter-American Development Bank (IDB), and Development Bank of Latin America (CAF), and other institutions; however, these programs have focused mostly on facilitating trade and, in some cases, social development and environmental protection, rather than on productive integration (SELA, 2011; ECLAC, 2009).

The fifth group of initiatives that may help the development of production with a positive social impact – although with a much wider potential – is one that focuses on the land borders between Latin American and Caribbean countries. The effect of these initiatives may be very relevant considering that these areas have the highest levels of poverty and marginalization. Frequently, indigenous communities living there enjoy little access to utilities and formal work, particularly in remote areas (Martínez-Piva and Cordero, 2009). Some border development programmes in force in the region show the concern that certain countries have about this issue.<sup>20</sup>

It is necessary to think about non-traditional activities in border areas that may be financed with regional and international funds. Considering that border areas are, in most

---

<sup>20</sup> A recent SELA document (2011) mentions the following border programmes: Binational Development Plan of the Ecuador-Peru Border Areas; Cúcuta/Villa del Rosario-San Antonio/Ureña area, in the Colombian-Venezuelan border; Trifinio Plan, between El Salvador, Guatemala and Honduras; Brazil-Uruguay Border Area Integration; Costa Rica-Panama Border Area Integration.

cases, very rich in natural resources, particularly forests, programs could be designed for the production of environmental services. This could solve some sustainability problems, while the population in those areas obtains jobs protecting those resources (forest protection programs for CO<sup>2</sup> recapture, reforestation, sustainable forestry, etc.). Another source of jobs that could have a more significant role is eco-tourism in remote areas, where employment is limited. The Central American Council on Tourism (CCT), as part of the SICA, adopted a similar initiative – planned to end in 2013 – with the approval of the Strategic Sustainable Tourism Development Plan of Central America, which implied taking joint integration actions in planning, product development, training and institutional consolidation. Most Latin American and Caribbean countries have an immense biodiversity, with large forests, water bodies, and other natural resources that may offer a number of activities and jobs, which, used in a sustainable way, may create additional wealth for those countries.

Thus, the regional policy should focus not only on reducing transaction costs and coordinating the supply of regional public goods (infrastructure research and development, funding), but also on specific programmes to generate regional value chains in some particular sectors and make contributions to the elimination of regional and national inequalities.

Therefore, the Latin American and Caribbean countries need to talk about the role of foreign direct investment from third countries and trans-Latin companies and the best ways to take advantage of their presence (formation of suppliers, border programmes, etc.) in the productive development of the region. Cooperation between public and private sectors at local, regional and international levels might reinforce that impulse and help include undeveloped sectors (formation of suppliers, border programmes, etc.).

### BOX 1

#### Trans-Latin companies and foreign direct investment (FDI) from third countries

The increasing investment flows originating in and destined to Latin America and the Caribbean have been a significant way to connect countries. Improvements in business, finance, and service networks among others, have led to a *de facto* integration between several countries in the region.

The dynamism of these investment flows from trans-Latin companies in Latin America and the Caribbean has been exceptional, reaching US\$ 43 billion, that is, 10% of the total FDI that the region received that year (ECLAC, 2010). According to the same source, 47% of the total mergers of Latin American and Caribbean enterprises were with companies of the same region, and more than 50% of the investments in new trans-Latin facilities are also in the region.

The investments of trans-Latin companies have been mainly in basic industries: hydrocarbon, mining, cement, cellulose and paper, and steel. There were also significant investments in food and beverages, and some public services such as telecommunications and energy, and others like the financial sector, air transportation and trade, like supermarkets.

The role of Latin American companies in infrastructure is very relevant, although government investments still prevail, whether of the country where the work will be done, or the governments from where the companies originate (for example the US\$ 1.0 billion loan that Brazil gave to Panama to build the Panama City Subway). The logistics platform that facilitate the transport and trade of merchandise, such as the expansion of the Panama Canal, and Uruguay as a regional logistics platform, have marked a milestone in the capacity of some countries to enter massively into the international market with their products (ECLAC, 2010). Also very important is the investment in energy between the region's countries, for example the financing of investments in biofuels made by Brazil to other countries in Latin America and the Caribbean (for example, BNDES of Brazil authorized credits for US\$ 22.10 billion in 2011 to produce biofuels in Paraguay; <http://www.wwe.paraguay.com/internacionales/brasil-invierte-en-potenciar-los-biocombustibles-71653>).

Although still incipient, it is important to mention that trans-Latin companies have started operating in the software sector (Softtek of Mexico, Sonda of Chile, Globant of Argentina, and TOTVS of Brazil, ECLAC, 2010). In 2010, 10 out of 102 companies that invested in new software projects in Latin America and the Caribbean were trans-Latin companies. Finally, we must highlight the segmentation of some services, whose productive chains have relocated in different parts of the region, for example the movie industry of Mexico that frequently sends to Argentina or Chile some production processes that are too expensive to produce in that country (Martínez-Piva, Padilla, Schatan and Vega, 2010); or the data processing services that public or private enterprises (banks, Ministries, etc.) send to other countries in the region where they are less expensive.

This dynamic movement of investments and credits between Latin American and Caribbean countries are undoubtedly a sign that the region is becoming integrated and consolidated in several areas, and that it is capable of generating its own projects and finance them within the region, making it less dependent on foreign resources. It is important to mention that these regional flows benefit the larger economies the most, but also the smaller ones are entering the scene as credit recipients from the region's larger countries.

#### IV. PRODUCTIVE DEVELOPMENT POLICIES IN THE REGION

Many analysts have mentioned the need to modify the meaning and concept of “industrial policy”. In the 1980s, the term meant the direct intervention of the State in the economy, and government control of significant parts of the productive apparatus, as well as a set of public actions aimed at limiting the scope of the market. As Bianchi and Labory (2006) remark, today, the concept of industrial policy includes a variety of policies applied by several institutional subjects, to stimulate the creation of enterprises, favour their clustering, and promote innovation and competitive development in the context of an open economy. The authors point out that new industrial policies pertain to industrial development, where the industry is considered implicitly as an organization, together with its services, managing human competence and technological capabilities. These policies are dynamic and their programmes must evolve in time, according to changes in the economy and in its context.

The new industrial policy lies in the potential of inter-firm cooperation, and the generation of externalities and cluster economies. (Marshall, 1890; Marshall, 1919; Krugman, 1998; Porter, 1990; Brusco, 1982; Becattini, 1979). The implication is that work must be done in the social-relational nature of learning and knowledge. Hence the importance given to the connectivity and the interaction between economic agents: brokers and intermediaries, business support institutions, business cooperation networks, and government development agencies. All these promote dialogue and coordinate cooperation from top to bottom, and from bottom to top (Sepúlveda and Amin, 2006).

The new policy replaces the State as the main actor, and emphasizes the need to have diverse local and federal institutions working together in a less interventionist environment. However, since the State is still the main coordinator and regulator of economic activities, its political will to participate and help is fundamental for this policy to become a reality.

Although the manoeuvring margins in Latin America and the Caribbean have decreased in the last 25 years due to the discipline established by international trade codes (WTO among others), there is some space for an industrial policy that has not been used. In this connection, Amsden (2005) states that maybe the greatest obstacle for growth in the manufacturing sector in those countries whose industrial diversification is stagnated or just beginning is more a lack of “vision” than the WTO’s restrictions. There are some actions that could be used in the policy to promote technological change, environmental care, and regional development. With the same trade rules, the governments of various countries have taken advantage of the available space for a domestic policy of growth and productivity (Mercado, 2011).

We must mention the experience of countries in South East Asia, Europe, and even the US government, which planned to spend US\$ 40 billion only in its Energy Department, in loans and subsidies to encourage private companies to develop green technologies (electric cars, new batteries, turbines and solar panels).

Finally, a fundamental component of the new industrial policy is public-private alliances (PPA), because, as it has already been mentioned, neither the State, nor the private sector individually can boost a successful productive development. According to Devlin and Moguillansky (2010), PPAs can be considered an “assembling tool” combining the interests of different sectors that put into effect the full capacity of the country, with the aim of consuming the economic transformation.

These authors make distinctions between: a) PPA in the global environment that can be advising committees of the presidency or even participate in the definition of strategies;

b) public-private collaboration in sectors and regions and, lastly, c) PPA in public entities. It has been a challenge to reach these kinds of alliances in LAC countries, yet they are increasingly needed. The State needs to collaborate closely with the private sector; but retaining its autonomy with respect to safeguarding the public welfare or, what Evans (1995) – a pioneer in modern industrial policy – refers to as “deeply rooted autonomy”. Devlin and Moguillansky (2010) recommend that these alliances shall be based on three pillars: A strategic vision of a proactive country on a medium and long term, a decisive support by the State of the PPA and an efficient execution. Remarkably, even in small countries such as El Salvador, and with a tradition of openness and market liberalization, industrial policies featuring the participation of many actors from the public sector (nine state-owned entities), the private sector (businesspersons from the food and beverage, textile and clothing, chemical and pharmaceutical sectors), the academy, and trade unions (Lazo Marín, 2013).

In Latin America and the Caribbean we can talk about the implementation of a new industrial policy, incipient in some countries, and deeper in others. Besides the horizontal instruments adopted during the times of the Washington consensus, new production development policies are being implemented, like the programmes to boost the association and strengthening of SMEs; the re-emergence of development banks, and the adoption of policies to create suppliers of networks of domestic and foreign producers.

### **1. The legacy of previous industrial development policies**

The stage of economic development policy during the 1950s and 1960s, in which a process of import substitution was developed and the State assumed a very important role in the economy, entered a crisis in the 1970s, and many of its instruments were almost completely abandoned in the 1980s, due to fiscal deficits and foreign debts. Nevertheless, the production structure in many of the region's countries changed during this initial phase. Many companies could not remain competitive during this opening and disappeared, and domestic production was replaced with imports, but the industries that were created during the period of import substitutions still persist, whether in the hands of the public sector or privatized. Those that were able to revamp and modernize themselves are presently very important enterprises, which have contributed to the development of their countries, like Petrobras and Embraer in Brazil, or CEMEX in Mexico.

On the other hand, some sector policies implemented during the 1950s and 1960s didn't disappear completely. In Argentina, Brazil, and Mexico policies were implemented to replace the import of cars, attracting FDI to the sector and offering different types of fiscal, tariff, and/or credit incentives since the beginnings of the import replacement strategy.<sup>21</sup> Afterwards, many plans and policies emerged to develop this sector at the national and sub-regional level: there were agreements to develop this sector jointly within MERCOSUR starting in 1988, in the Andean Community since 1999, and the free trade agreement in the automotive sector between Mexico and MERCOSUR in 2011.

Since the 1980s, economic policies promoted the free market internationally, trade opening, deregulation, the elimination of trade barriers, and the establishment of clear non-discrimination rules in trade, which would consolidate with the creation of the WTO in 1995 (at the end of the 1990s, almost all countries in Latin America and the Caribbean

---

<sup>21</sup>Argentina promoted the first mixed capital company (domestic and foreign), IAME and Kaiser Motors Corp., in 1955. Brazil had its first automotive programme in 1956 through Goal 27 of its Goal Plan. And the first decree in the automotive sector of Mexico was in 1962.

were part of the WTO). At the same time, most public sector enterprises were privatized, interest rates and exchange rates were liberated, many central banks became autonomous, and legal limits were established for public deficits.

The strategy adopted – the Washington Consensus<sup>22</sup> – a term coined by John Williamson in 1989, didn't have the expected results regarding GDP growth rates, while unemployment and poverty increased. The latter indicator increased from 40.5% to 48.3% of the total population between 1980 and 1990 in the region (ECLAC, 2009).

These results led to the adoption of “second generation” economic policies that consisted in a series of institutional changes that would allow “first generation” policies to work properly, including better regulations and laws, including the financial sector, the labour market, the creation of social security networks, and poverty reduction policies (Navia and Velasco, 2003).

These second generation policies had different characteristics in the different countries of the region, but many were repeated in several countries, and were backed by international financial organizations. Among them we can mention an increase in the social spending of governments to support the most vulnerable groups; a competition policy whose mission was to guarantee a truly competitive behaviour between market actors; and intellectual property protection laws, to stimulate innovations and guarantee their property.

From the 1990s, and especially from the 2000s and 2010s, a series of more focused productive development policies have been adopted. The policy to support SMEs is in a scope shared by new horizontal and industrial policies; hence, it is worthwhile to analyze them more deeply.

## 2. Policies to support SMEs

Among the policies that emerged when the Washington Consensus started to fail, was that in support of SMEs. These companies had traditionally been an important job generator: 43.6%, 42.6%, 47%, and 30.8% of the total formal employment in Argentina, Brazil, Uruguay and Mexico, respectively (Ferraro and Stumpo, 2010) and between 30% and 50% of employment in the whole region. (IDB, 2005). The presence of formal and informal SMEs was very high in some countries. For example, they accounted for more than 90% of the companies in Central America (SICE, SIECA and CENPROMYPE, 2010). The success of the SMEs is considered crucial to prevent the loss of more jobs, to generate new job posts, support the most vulnerable business sectors, and fight poverty in the region, among others.<sup>23</sup>

The region's countries could have a more dynamic and inclusive development if their SMEs could have the proper momentum. However, this sector doesn't count on the required support in any of the region's countries, as can be seen in the meagre national

<sup>22</sup> This would be the essence of the public policies up to the mid-1990s: fiscal discipline; establish priorities in public spending, support the poorest segments in a more focalized manner, basic health and education; tax reforms, expanding the base and with moderate marginal tax rates; liberalization of interest rates; competitive exchange rates; trade openness; liberalization of FDI; privatization; deregulation; and the defense of property rights.

<sup>23</sup> In the 1990s and the 2000s, a more solid legal and institutional framework was created to support these producers, but they were still very limited to really make a difference in the performance of these enterprises as a whole. Nevertheless, the policy has been very dissimilar in the region. For instance, the Brazilian Service to Support Micro and Small Enterprises (SEBRAE), the Corporation for Production Development (CORFO), and organizations such as the National Commission for the Micro and Small Enterprise (CONAMYPE) of El Salvador, and the Fund to Support the Micro, Small and Medium Enterprise (Fondo PYMES), in Mexico, were much weaker. In a third group of countries, Argentina, Ecuador, Paraguay, Peru and Uruguay, efforts to support SMEs have been sporadic and uncoordinated. (Ferraro and Stumpo, 2010).

budget they are assigned, 0.1% of GDP in the best of cases (Ferraro and Stumpo, 2010). International cooperation has helped significantly to complement budgetary resources for SMEs, as can be seen in detail in a recent document prepared by SELA. However, international funds are frequently assigned in a scattered manner, through different programmes that are not coordinated between them, leading to duplications, inefficient use of the resources, and lack of connection between the supply and demand of financing (SELA, 2010). Thus, a difference hasn't yet been made in the development of this large group of enterprises.

Despite all these difficulties, we must not underestimate the development of more promising ways to support SMEs that focus not so much on the individual company, but on it within a *cluster* or production chain, as well as on its technological innovation. This makes such companies connect with others locally, which makes the productive fabric grow, and also with educational institutions, local governments, and other entities that are close by, which may create a context that fosters the success of the enterprise (Sztulwark, 2011). These associations are made effective in joint purchases, joint exports, associations between enterprises to access credit, links associated to subcontracts, etc. (Ferraro and Stumpo, 2010). Regarding financial support, new instruments have been created.

It is worthwhile to illustrate some of these changes with national experiences:

In Brazil, for example, there are many incentives for SMEs, some of which are relatively new and are directed to innovation and development activities. The "Ley del Bien" (2005) channels fiscal incentives for innovation, benefitting R&D activities implemented by SMEs together with science and technology institutions (Crocco and Santos, 2011). There are also stimuli for innovation, such as funds to promote the relationship between universities and enterprises, and programmes to support enterprise incubators. There are others for technical assistance to innovation, and technical and financial support to promote exports from these enterprises. The Brazilian Service of Technical Solutions (SBRT) facilitates access to non-complex technical solutions for SMEs and even for individuals (Crocco and Santos, 2011).

In Mexico (Domínguez and Brown, 2008), where the Washington Consensus policies were strictly implemented, the industrial policy was replaced with policies supporting the entrepreneurial sector, and financing through development banks decreased significantly. The new policies supporting micro, small and medium enterprises (MSMEs) didn't materialize until 2001,<sup>24</sup> when market failures, unemployment, and inequality appeared in public policy agendas. Within this approach, the initiative to foster productive chains emerged, to favour technology transfer to smaller enterprises, and foster the clustering of MSMEs so they could be more competitive in the markets or in productive chains (Domínguez and Brown, 2008).

Mexico's effort to somehow compensate the policies that reduced financial support to MSMEs is noteworthy, particularly facilitating access to credit for these companies. To this end, a National Financing System (SINAFIN) was created, which includes three programmes: (a) the National Programme of Guarantees, which support SMEs to access credits from commercial banks; (b) the National Programme of Financial Outsourcing, which is a fund that hires financial executives to help SMEs access credits from the financial brokers authorized by the SME Fund; and (c) financing through seed capital schemes (Domínguez and Brown, 2008).

---

<sup>24</sup> The grounds of this new policy are established in the Law for the Development of Competitiveness of Micro, Small and Medium-sized Enterprises (MSMEs) (2002).

Booting SMEs requires increasing cooperation between them, developing new activities and products, sharing computerized systems, achieving economies of scale, and sharing risks in new investments. Having access to a CIT system allows for establishing links with other companies at the national, regional and international levels, and obtaining some benefits from them. An example is the case of the Taiwanese branches in China, which by investing in companies with modern computerized systems, have access to a modern computerized system in their home offices without having to make large investments (Ueki, Tsuji and Cárcamo, 2005).

A relevant experience in regional initiatives to support SMEs is the Centre for the Promotion of Micro and Small-sized Enterprises in Central America (CENPROMYPE), which could be a reference for other initiatives in other subregions of LAC. One is on "Inclusive Chains in Central America and the Dominican Republic" of the productive sector that promotes the creation of quality jobs, gender equality and environmental sustainability. The Project is expected to reinforce the organizational structure of two productive chains in each of the identified border territories: Wood and Furniture, and Community Rural Tourism. Another interesting programme is the "Integral Central American Plan for Social Cohesion and Economic Development through the implementation of ICTs in Nicaragua and El Salvador" aimed at improving the competitiveness of Central American enterprises, through access, implementation, and use of ICTs in business processes.

In order to become competitive in the national, regional, and international market, the MSMEs in the region require government support so that they can count on the necessary public goods; to develop the ICTs that may support their joint operations and facilitate access to financing those association processes, among other types of support. The possible agreements that could be made sub-regionally or regionally would be very helpful to achieve a more inclusive development and overcome the large inequalities within and between the region's countries.

For their part, regional cooperation organizations and development banks have created programmes to support national and subregional policies to foster SMEs. Particularly in the case of SELA, since 1999 until 2012, it developed a comprehensive programme to support public and private national organizations promoting SMEs in Latin American countries, called the IBERPYME Programme. From this current year, the SELA-SMEs Programme for Latin America and the Caribbean has been adopted. Through this programme, actions have been developed to improve public policies, the adoption of credit guarantees systems, the creation of producers and exporters consortiums, the development of innovation policies, and the promotion of business relations.

### **3. The re-emergence of development banks**

Development banks initially emerge in LAC due to the lack of or meagre development of capital markets to meet investment and financing business requirements in the mid and long term. The crisis of the 1980s had a negative impact on the financing programs of development banks since they were considered an obstacle for the development of capital markets, since they channelled mid and long-term resources to businesses, thus making capital markets redundant as financing sources (Calderón, 2005). Therefore, many of these banks were liquidated, like the Banrural System in Mexico, and others were reoriented to complement commercial banks instead of displacing them, like the case of Nafin in Mexico. In fact, in the 1980s and 1990s, development banks were less active and limited to correct market failures such as asymmetric information, and endogenous credit segmentation.

However, credits obtained this way were mainly earmarked to be used as working capital, so financing for capital formation continued being marginal (Morfin, 2009). In this

sense, development banks assumed a relatively passive stance vis-à-vis the development process, meeting a demand for funds, which was spontaneously created by already ongoing investments, and that was not satisfactorily addressed by the existing financing system. According to this approach, the main function of a development bank consists of financing the “repressed demand” for long-term credit, so that banks with a sector-based scope (agriculture, housing, exports, among others) prevailed (Hermann, 2010).

Evidence shows that reforms did not result in the expected degree of depth in the development of capital markets, which, along with the decreased activity of development banks in the 1980s and 1990s, contributed to worsen the long term financing issue (ALIDE, 1997). In some countries, the creation of long-term financial instruments was incipient and occurred mainly through the bond market, the risk capital industry, investment and guarantee funds, credit insurance, and the development of derivatives markets (Titelman, 2003). According to this author, the result was a high concentration of short-term financing with highly segmented credit markets, which translated into insufficient access to credit by SMEs, small farmers, and young people without credit history but with innovative projects. Since the late 1990s, in some countries, this provided renewed momentum to development banks with multiple functions linked to the development process (Hermann, 2010).

Some achievements made in deepening the financial sector notably include some financial intermediation functions, such as factoring, financial leasing, asset-backed securitization, trust fund administration, and provision of guarantees (Titelman 2003). There was also some provision of (still very incipient) risk capital funds, which are an instrument oriented toward financing the creation of companies in innovative areas; this implies risky because not all projects survive commercially, but those that do, have high rates of return. This industry, known as “venture capital” has played a significant role in the U.S., to finance new information technology industries, the development of Internet, e-business, and biotechnology (Rivas, 2004).

According to a broader approach, the functions of a development bank go beyond addressing the repressed demand and include more active actions in light of the development process. From this perspective, a development bank should anticipate demand, identify new sectors, activities, products and strategic productive processes for national development, as well as promote investment programmes in those areas. In addition to the typical activities of a financial institution, that is, voluntary or mandatory attraction of savings and channelling thereof to finance selected investments, banks are also engaged in research activities, technical assistance, and eventually, the formulation of investment and financing programmes (Bruck, 2005).

Today, a paradigmatic case of this connection is Brazil’s BNDES, which since the late 1990s had had an interesting performance. This bank implemented a series of financing instruments and lines to channel resources toward large industrial and infrastructure enterprises and also SMEs; it also increased its participation in agriculture, trade, services. According to Hermann (2010), between 1990 and 2006 its anti-cyclic role predominated, and, equally important, the bank prevented an even greater shrinkage of the credit-GDP ratio, and probably of investment and economic growth rates.

Together with other government entities, BNDES has participated directly in the formulation of the industrial (since 2004), technological and foreign trade policy (PITCE), through which government export-support programs became part of the industrial development promotion programs. BNDES focused on sectors with a high innovation capacity, aiming at increasing competitiveness (Carvalho, 2005), which has allowed it to become one of the main public financing institutions (Hermann, 2010). Credits granted by

BNDES went from 40 billion reals in 2004 up to 139.7 billion reals in 2011. In the case of Mexico, De María y Campos, Domínguez, Brown and Sánchez (2010) have urged to “reinvent” development banks in that country, to support sector and regional programs, emulating the role of those banks in countries such as China, India and South Korea.

It is worth taking into account that development banks may act at the global, regional, sub-regional, and national levels. The Multilateral Development Banks are characterized by operating in spheres that are present in multiple countries. These banks are able to attract resources on international financial markets, which are later granted through credits to member states under more favourable terms and conditions than those of private financial markets. Similarly, they mobilize official resources that are channelled towards beneficiary countries. At the sub-regional level, it is worth referring to the Central American Bank for Economic Integration (CABEI), the Caribbean Development Bank (CDB), the Development Bank of Latin America (CAF), the Financial Fund for the Development of La Plata Basin (FONPLATA), the Latin American Exports Bank (BLADDEX) and the North American Development Bank (NADB).

#### **4. Creation of suppliers, information networks and foreign investment**

The dismembering of production chains in Latin America and the Caribbean has made it difficult for several large local and foreign companies to find suppliers. For this reason, programmes focusing mainly on the creation of suppliers are required.

Furthermore, the potential of small and medium-sized enterprises to become suppliers has substantially changed thanks to ICTs, as they enable enterprises to establish a virtual bond with other companies, contribute with their training; provide them with access to the financial system and commercial networks. Although most SMEs continue to be very basic, their technological level is precarious, lack skilled labour, etc., many of them are emerging with a different profile: They can be companies arising from business incubators, or spin-offs from other companies, or companies that especially incorporated as suppliers of larger companies. In this regard, many of these companies emerge with an already defined insertion in the Global Value Chain or Regional Value Chain. Technological advances allow many small companies to be better inserted into the complex productive processes and be flexible enough to adapt to the diverse and changing market needs, particularly in the service sector, for example software, e-commerce, etc. (Sztulwark, 2011). Similarly, SMEs that are not so technologically advanced from their inception can aspire to strengthen their capacities by using these new means of communication.

Companies that are capable of pulling on other companies as tractor companies of gazelle companies which are companies with significant growth rates stand out in Mexico. Therefore, the main objective of the National Programme of Tractor Companies is to strengthen the value chain of the main tractor companies in the country. The programme is based on the supply opportunity that large purchasing companies offer to their “gazelle” suppliers to respond in a competitive manner to the demand for products and services, which have the ability of pulling on hundreds or thousands of small and medium-sized enterprises. This strategy has identified five sectors for the strengthening of value chains in Mexico, including: government purchases, maquila industry, transformation industry (automotive, aerospace, electronics, home appliances, and food, among others); commercial chains; and hotel chains. In the case of the aerospace industry, a number of small companies are being incorporated as suppliers of this chain.

The policies for State procurement can play a transcendental role inasmuch as the State has the ability to promote development through the focalization of local sectors and those at a decentralized level with a high potential impact on the generation of products

and employment, which, under equal conditions, with imported products of the same quality and price, should have an advantage at the time of evaluating the offers at public bidding. As reported by Martínez and Ocampo (2011), Petrobras' supplier policy is a spectacularly successful case in terms of productive policies at the sectoral level thanks to the development of petroleum industrial linkages, which reproduced and surpassed similar schemes implemented by Malaysia and Norway, among other countries, (De Negri 2010). The instruments included the use of Petrobras' purchasing power and local content clauses. The result was a significant increase in local content from 25% and 54% in the exploration and production phases in 2003 up to 69% and 89% at present, respectively, reaching high levels for the international standards. According to the authors who studied 70.000 companies that have signed contracts with Petrobras since 2003 and compared them to those that did not, the impact of this policy was remarkable. A recent study reports that the number of scientists, researchers and engineers increased more in the supplying companies than in the non-suppliers, and that companies that had contracts signed grew and exported more after entering into contracts with Petrobras (De Negri 2010). It could be thought that countries like Mexico, Chile and others, such as the Central American countries that have signed FTAs with North America, cannot have these types of programmes, but these agreements have an investment threshold below which public purchases can operate as stated above.

A relevant aspect of this supplier policy of PETROBRAS is that it entailed the development of production capacities that did not exist, based on a comprehensive policy that particularly included a research component. The result of this strategy is that Brazil became one of the worldwide leaders in petroleum technology, consolidating a knowledge network with universities around the world, typical of the mature innovation systems. By means of a succession of phases in which the participation in knowledge networks went from an assimilation to an adaptation level and finally to a generating level, Petrobras, a latecomer company into the petroleum industry, participated in increasingly complex and diverse networks and managed to complement their innovative tasks with those of their partners in the network (Dantas and Bell, 2006).

Recently, FDI has tended to look for more local suppliers thus helping them to develop the necessary capacities. This phenomenon can be seen in the auto parts industry in Mexico, Brazil and Argentina. The State also plays a more active role, through the adoption of new policy approaches to attract FDI by negotiating, for example, an advance in the value added scale by means of the local production of more complex components or design activities, among others. An example can be seen in the actions of ProMexico to attract investment in the aeronautic industry or the development of electronics in Costa Rica.

## **V. REGIONAL R&D POLICIES TO PROMOTE GREATER ADDED VALUE AND COMPETITIVENESS**

Previous chapters show that LAC countries have tended to change the production structure towards the services sector, which is dominated by low productive activities, while there has been a trend for the deindustrialization and a retreat of the primary production as a proportion of the GDP. Exports have been refocused in several LAC countries and, in general, have been located in markets of low added value. In this regard, the region needs to make an effort to diversify their production and advance technologically in all sectors.

The current global technological revolution is the most radical in history and its dynamics is unprecedented. The huge advances in information and communications technologies (ICTs), as well as in transport, satellite, bio- and nano-technology, among others, have allowed the constant change of productive systems. The first two innovations have

resulted in the deverticalization of the productive processes and the relocation of the various links of the productive chain in the manufacturing of goods as well as in services.

In practice, the developed countries have moved towards the new economy of information and thereof have created a constant source of technological innovation. The productive transformation segment – raw materials and labour – is approximately 20% of the total value of product currently in the industrialized countries, while the rest consists of non-material added value. The production has become more intense in knowledge and has increased the complexity of the productive processes. This new phase of the productive system has brought about new training requirements, including professionals and technicians that can make analysis of systems and models, specialists in information and knowledge, communications, among others (De Bandt, 2006).

LAC, since the end of the 1980s, have transited a “destruction” and “creation” process of productive, technological and institutional capacities, from which a new productive and technological situation has emerged, accompanied by a change in the structure and profile of the companies of the region, according to Katz (2006). The conditions under which these changes occur have not been very appropriate for catching up with part of the region similar to that of the Asian countries, given that due to international commitments for the protection of intellectual property, it is not easy to copy products and create reverse engineering. In this manner, carrying out investigations and introducing innovations is essential for the productive development of developing countries.<sup>25</sup>

However, investment in R&D in LAC has been insufficient by both public and private sectors. According to a recent report by the World Bank, only 8% of LAC companies have invested in R&D in 2009-2010, and the actual estimates of R&D spending are quite low (about 0.5% of annual sales). Older, larger, and exporting companies are more likely to be involved in R&D spending than smaller, younger, and non-exporting companies.<sup>26</sup> The public sector, for its part, does not invest sufficiently in R&D. In LAC in 2011, public spending in this category reached 0.8% of the GDP, compared to the 2.3% reported by the United States in the same year.<sup>27</sup>

It is interesting to think of China as a point of reference, which for several decades nurtured on the technology provided by the massive FDI that entered this country, but currently their priority is to create their own technology (their goal is to dedicate 2.5% of their GDP to R&D by 2020) (Dahlman, 2009).

The possibilities for the countries in the region to collaborate or work jointly in productive activities and innovation have increased thanks to the advances in ICTs. In 2012, 118 million persons from LAC had access to broadband, according to consultants ComScore.<sup>28</sup> The perspectives of acceleration in the incorporation of ICTs in the region have given rise to the entry of new participants that will help in this process. For example, the Japanese company Furukawa, which manufactures optic fibre, structured cable and the installation of triple play, has constructed three production plants in Latin America,

---

<sup>25</sup> In fact, some authors sustain that the problems of coordination are more important than those of appropriation of new knowledge. According to this perspective, there are many new products and technologies that the countries of the region are in a condition to develop, but, as expressed by Hausmann and Rodrik (2003), much of these are yet to be “discovered”.

<sup>26</sup> *Do Latin American Firms Invest in R&D?*, Lets Talk Development, World Bank, 03/11/2014; <http://blogs.worldbank.org/developmenttalk/do-latin-american-firms-invest-rd>.

<sup>27</sup> Red de Indicadores de Ciencia y Tecnología, [www.ricyt.org](http://www.ricyt.org).

<sup>28</sup> Infobae.com, <http://America.infobae.com/notas/50626-America-Latina-cada-vez-mas-conectada-a-internet>.

located in Panama, Sao Paulo (Brazil) and Berazategui (Argentina) and various commercial offices.<sup>29</sup> The challenge for LAC is to increase and to take more advantage of the connectivity than they are currently doing, and for this the collaboration among countries is essential. To date, the most important initiative in this regard is the Latin American Advanced Networks Cooperation (CLARA) created in 2004 and financed mainly by the European Union, although with local participation also. The objective of this programme is to interconnect, through the CLARA network, the academic and investigation networks of LAC with GEANT, its equivalent in Europe. For this purpose, in several countries, CLARA helped create the National Network of Research and Education. This initiative is contributing to reduce the digital gap within the region and between this and the developed world. This involves generating a Latin American capacity for scientific and technological collaboration, which is essential for creating an information society in the region that would allow for development of its own technology.<sup>30</sup>

In addition to the CLARA initiative, there is CEPAL @LIS2, which is aimed at promoting the information society in LAC, as well as bringing the region closer to Europe in this matter. The CEPAL @LIS2 programme is focused on five priority areas, promoting ICTs: health, education, access to broad band, electronic government, and productive sector, that is, the use of ICTs as a form of modernizing and upgrading access to new markets, particularly small and medium-sized enterprises.<sup>31</sup> Tied to this initiative is the Regional Dialogue on Broad Band, which is a common space where the countries in the region exchange information and make a collective effort to spread the broad band to the LAC territory. The main idea is that, based on the information provided by countries, the local demand is added and this gives rise to interchange of traffic of broad band regionally, which accelerates and reduces the costs of this service.<sup>32</sup>

Thanks to the improvement in the infrastructure of ICTs, there are now many companies that have been able to locate in high-tech market niches within the ICT sector. This is the case of several production platforms: those of operating systems, which include microprocessors, internet search engines, and reproducers of communication networks, among other applications. The case of ARTech Consultores S.R.L. in Uruguay is a very interesting example of a successful software development platform based on knowledge. Currently, ARTech has offices in Chicago, Sao Paulo, Mexico and Shanghai, distributors in 28 countries, and 4,500 companies use its software. The main strength of GeneXus is the management of business systems knowledge.<sup>33</sup>

Other relevant examples in matters related to information services and software in LAC are the Chilean group Sonda, which specializes in providing integration services, consultation, software development on demand and which is present in ten countries in the region; the group ASSA in Argentina, specialized in consulting and maintenance of software packages for multinational companies such as SAP and Oracle (López, Ramos and Torre, 2009); AND Softek of Mexico, which is the largest independent IT provider in

---

<sup>29</sup> Todo Logística y Comercio Exterior, "Japanese export optic fibre cables to Uruguay from Argentina". <http://www.todologistica.com/site/index.php/latinoamerica/uruguay/40-negocios-y-comercio-exterior/68-japoneses-exportan-cables-de-fibra-optica-a-uruguay-desde-argentina.html>. Consulted on 18 May 2012.

<sup>30</sup> portal.oas.org/LinkClick.aspx?fileticket=aSrfdKu2TDc%3D; URL: <http://www.augeraccess.net/>; <http://www.eu-eela.org/>

<sup>31</sup> <http://www.eclac.cl/socinfo/>

<sup>32</sup> At the subregional level the construction of the Mesoamerican Information Highway will be very useful to help Central American countries to reduce the costs and improve the offer of digital services, particularly broadband, thus opening new paths to a region which is lagging behind in terms of ICTs.

<sup>33</sup> Overview of GeneXus, <http://www.genexus.com/productos/genexus/genexus-home?es>; consulted on 8 May 2012.

Latin America, with offices in several countries in the region and which offers services related to applications, outsourcing of business processes, support of IT infrastructure and software products and associated services.<sup>34</sup> Some countries in the region are already important points for the location of offshoring of business processes or for shared service centres (López, Ramos and Torre 2009).

Additionally, a special challenge for LAC is their traditional specialization in natural resources, which are available in abundance and represent a comparative advantage. The large number of Asian countries, with abundant labour supply but lack of raw materials, has caused a significant increase in demand. Awareness of the strategic value of these resources and the inevitable shortage of them, whether now or in the future, have awakened the interests to assure access to these by a number of countries, particularly the industrialized and emerging countries. However, this sector will continue to be a prey to a great price volatility, which requires countries to take express steps to deal with it.

Therefore, for this advantage to make a real difference in the development of the countries in the region, this type of production must be incorporated into a more modern technological source, which helps diversify production, adds value and has a more productive effect on the economy (Devlin and Moguillansky, 2012). Australia and New Zealand are interesting examples in this regard, since, while being specialized in exporting natural resources, they have reached a more advanced stage of development than LAC countries.

In LAC, higher demand for primary goods has encouraged greater production, but without an important parallel technology development. If a strategy were promoted for resource-based activities to continuously improve technologies, creating high value added niches, these countries could significantly overcome their condition of disadvantage (Perez, 2010).

The challenge is not only to generate knowledge and create technology, but also to implement it. It should be noted that in LAC, the existing R&D hardly result in their innovation and marketing in the primary sectors. In the case of soybeans, for example, the new technologies developed locally for this sector, according to a study by IFPRI (Falck-Zepeda, et al, 2009), have barely been able to transfer them commercially. Thus, in practice, conventional technologies are adapted to local production. Among obstacles to exploiting advances in local R&D are the limited capacities to assess biosecurity and its high cost, as well as the complexity of the regulatory processes. However, in addition to the aforementioned, the intellectual property rights on technology create great limitations for soybean seed management. It is a challenge for the countries that are planting soybeans to produce their own transgenic technology, as well as to develop other proprietary technologies linked to the value chain of primary products.

The joint effort by the countries in the region to create R&D centres, aimed at developing biotechnology, and laboratories, focused on assessing biosecurity and food security, would be very useful, especially for smaller economies whose capacity to finance such processes is lower than that of other economies. In this connection, it is worth mentioning at least two regional experiences in Science, Technology and Innovation (STI): (1) the Mesoamerican Network for Research and Development on Biofuels (RMIDB), which groups together public and private sector institutions and is aimed at generating knowledge and new products with a regional impact to meet the sector's demands for

---

<sup>34</sup> Softtek, <http://www.softtek.com/mexico>.

technology and prospects; and (2) the Network of Research on Biomedicine of MERCOSUR, with the participation of research centres of the four MERCOSUR countries. It is aimed at studying diseases of concern in this subregion.<sup>35</sup>

The technological proposal of Carlota Pérez (2010) for LAC is very useful, because it has an inclusive vision from the social point of view. It is based on a dual strategy in which there should be coordination among the different productive agents. This strategy has two components: one “from above” that would boost competitiveness in certain niches in the global technological frontier. The other part of the strategy is conceived “from below,” would focus on a specific – local or municipal – area and would a wide range of support to create a higher value-added production. At this level, specialized clusters that exploit local advantages are considered auspicious (Pérez, 2010).

Within this dual vision, the “from below” strategy points to poverty reduction, while the “from above” strategy helps activate and strengthen the economy, providing resources that would be required to finance the “from below” strategy (Pérez, 2010). The role of technological innovation in the primary sector of LAC, especially in the agricultural sector, is also of great significance in the area of food security and as a provider of energy inputs (biofuels). Its role in generating and improving employment can make a big difference in the living conditions of segments of the population that are currently among the poorest. To make such a scheme possible, the State should intervene to ensure that some of the benefits obtained by the most prosperous sectors help finance innovation in the more backward sectors. An important reference point for the financing of technological innovation is the creation of a Fund for Innovation in Chile, financed with proceeds from the copper mines (in periods in which the price of this metal has risen sharply in the international market).

A restriction, often pointed out by studies on technological development in LAC, is the lack of critical mass to achieve a breakthrough in Science, Technology and Innovation, even in the largest countries of LAC, such as Argentina, Brazil and Mexico (Dutrénit and Ramos, 2012). This critical mass should be generated through a greater public budget than that currently allocated by governments for R&D, so as to strengthen national innovation systems that in turn generate more solid achievements in science, technology and innovation.

Among the encouraging examples in the region regarding technological innovation is the wine industry in Chile and Argentina thanks to the relationship among different agents. Traditional sectors are not necessarily low technology and low knowledge-intensive sectors, but that they may be otherwise thanks to the acquisition of theoretical and practical knowledge of the dominant wine producing countries, which has made it possible to improve capacities, establish new routines and apply better practices. This case also confirms the scope of the networks of enterprises, with public actors and researchers. Universities and scientists have emerged as the major players, and the links between industry and research centres are becoming increasingly important, as they are being promoted by institutional changes. Producer associations, research institutions linked to government action through the political instruments focused on exports are essential (Giuliani, Morrison and Rabelotti, 2011).

Restriction on IP access leaves some gaps that developing countries can take advantage of. For example, in the pharmaceutical sector, when the patents expire, generic drugs can be freely manufactured. To take advantage of these opportunities, countries must have the laboratories and the required certifications. India has developed this sector

---

<sup>35</sup> <http://www.abc.com.py/nota/paraguay-integra-red-de-investigacion-en-biomedicina/>

enormously and is a major exporter (and has also purchased companies in many countries). Consideration should also be given to open source digital programmes that can be used by the general public and that allow for software innovations and other very useful applications.

## VI. CONCLUSIONS AND POLICY PROPOSALS

The performance of LAC economies has not been encouraging over the last two decades, due to: (i) insufficient GDP growth and an adverse GDP structural change (the manufacturing and the primary sectors would lost ground in comparison with the service sector, with low and stagnated productivity levels); (ii) an export growth that, albeit dynamic, did not contribute to the economic development as expected and was not able to close a growing external gap of trade in goods in several countries of the region; (iii) asymmetries inside and among countries, in general, were not overcome and, in some cases, aggravated, with small economies reporting the least GDP growth and the widest external gap in 1990-2011.

A comparative analysis between LAC and the performance of five medium-sized economies in South-East Asia (SEA), reported the following findings:

First: a significant difference in investment rate (31% vs. 23% of GDP in SEA and LAC, respectively in 1990-2011). This difference is even higher in a comparison to China, which registered an investment coefficient of 48% over the same time span.

Second and related to the above: a change was detected in the production structure, in favour of the manufacturing sector in the five SEA countries, whereas in LAC manufacture weight decreased over the same period. The manufacturing sector accounted for 27% of GDP in SEA countries and 17% in LAC countries in the period 1990-2011.

Third: SEA countries – while more open than LAC countries as per their export and import coefficients – have a more comfortable situation in relation to their external sector than LAC countries.

Fourth: the growing relevance of the manufacturing sector in SEA countries is linked to an increase in productivity, both because the manufacturing sector is a generator of technological innovation and due to its permanent ability to create better quality jobs.

Fifth: unlike LAC countries, which have an expanding service sector but a stagnated productivity, a virtuous circle exists in SEA countries between industrial dynamism and modernization of service sector. That is, outsourcing and industrialization process complement each other, instead of being a residue of sorts that assimilates those jobs that the other productive sectors are not capable of incorporating.

Finally, but with a positive effect on all the items described above in relation to SEA countries, there comes their ability to generate knowledge, partly as a result of a commitment of governments to investing in R&D, up to 3.7% of GDP in South Korea in 2010, whereas this process continues to lag behind in LAC, with 0.8% of GDP the same year.

Therefore, increasing investment rates in LAC countries is necessary, based on the involvement of a wide range of sectors that respond to a vision of the long-term development needs.

It is well known that Asian countries have made intensive use of a series of productive development policies that have helped them develop their economies with a long-term strategic vision. In Latin America and the Caribbean, vis-à-vis the current perspectives, several LAC countries are reassessing industrial policies, which had been ruled out along with the trade opening since the 1980s, but are still used by more successful countries like China, SEA countries, and even the United States.

If the implementation of industrial policies is considered feasible to take a significant leap towards productive development in LAC countries, three relevant elements have to be taken into account in this regard:

(1) A new-style industrial policy that, unlike that applied in the 1950s and 1960s, does not rests on import substitution and leading role of public sector production, but consists of an “open regionalism” and the coordination and collaboration among very diverse economic and institutional agents at the national and regional level. For a new industrial policy to be successful, it is necessary to have a strategic vision that gathers in it the visions of different key sectors; a decisive support by the State for public-private alliances, and a regulating role of the State for the application of a development strategy to be possible.

(2) The application of productive development policies that the countries have never fully taken advantage of because they have been considered forbidden as per the rules imposed by the WTO since the nineties in relation to subsidies, tax preferences, etc. Notwithstanding, these international rules make significant exceptions that allow countries to apply instruments to promote the development of geographic regions that lag behind from the economic and social perspective; bolster technological transformation; and support environmentally friendly productive activities. It suffices to remember that the United States could justify its millionaire support for automotive industry during the 2008-2009 crisis based on this last window that remained open for the industrial policy;

(3) Some sector-based policies have never ceased to exist in LAC countries, especially in the larger ones, and are still maintained, albeit more restricted than initially. This is the case of the automotive industry, which has thrived in several countries, particularly Mexico, Brazil and Argentina, which have transcended their original borders, generating regional productive chains that have even been able to involve smaller countries as suppliers (Central America, Uruguay and Paraguay, among others) and should maintain their parameters in an attempt to strengthen those productive chains in the region.

This paper highlighted at least three areas of the new industrial policy, which may make a difference in the development of countries and can see its results potentiated if they are jointly implemented:

(i) Support for SMEs, but through more effective ways than the traditional ones, focusing on business clusters or productive chains, rather than individual enterprises, searching for their technological innovation. These associations are materialized through joint purchases, joint exports, associations between companies to access credits, links to subcontracting and technological innovation, etc. A relevant experience as to the regional initiative to support SMEs is that of CENPROMYPE, which, among other things, promotes inclusive linkages of public sector in Central America and the Dominican Republic with the aim of creating decent jobs, reach greater gender equity and environmental sustainability.

(ii) Policies that provide national and regional development banks with renewed momentum. The new-style development banks should be able to identify new sectors,

## 40

activities, products and productive processes that are strategic for national development and promote investment programmes in these areas. Furthermore, they should support activities that may prove to be successful in the long term and that, in the short term, require risk funds, which can cover research activities and financing of new enterprises with innovative products. The paradigmatic case in LAC is BNDES, which has developed a series of instruments and financing facilities for a wide range of activities, from financing of infrastructure in Brazil and other LAC countries to companies of different sizes, including relevant programmes for SMEs across their borders.

(iii) Policies to promote supplier generation, helping companies to acquire productive capacities they did not have. These policies, if successful, make it possible to build value chains, increasing national or regional content. Large firms that produce some raw materials could play a key role in the formation of national and regional suppliers in relation to the States, like Petrobras in MERCOSUR. However, that role can also be played by trans-Latin or multinational companies.

New-generation Industrial policies could not boost productive sectors toward higher value added sectors without a science and technology and innovation policy, especially considering the current fast global technological revolution. However, the degree of R&D and innovation in both the public and the private sectors in LAC is very low, as already mentioned. A joint effort may help the region to take better advantage of the little resources it has for technological advance. Interesting experiences already exist that join efforts in the field of ICTs, which, in turn, facilitates communication among countries to share a series of other technological elements to train human resources for the integration of productive processes. However, further progress is required in this area.

An outstanding example of these regional experiences is the Latin American Advanced Networks Cooperation (CLARA), which is intended to connect, through "redClara", academic and research networks in LAC with GEANT, its European counterpart. A technological leap in the area of production of natural resource would be very helpful, considering the growing specialization degree of countries in this area, but their limited R&D capacities and their application as innovation. Some of the positive experiences in this area notably include the Mesoamerican Network for Research and Development in Biofuels (RMIDB), which gathers public and private sector entities and is aimed at generating knowledge and new products with a regional impact, which address demands of the sector in terms of technology and prospective issues.

Now when economies are increasingly articulated at the international level, a regionally shared policy would be very helpful to attain the joint economic progress of the region. The strategy of taking better advantage of the regional potential becomes more urgent, especially given the low growth prospects in LAC partner countries over recent and upcoming years (with the exception of China that, notwithstanding, will also register a slower growth rate). In spite of difficulties involved in the divergence of macro policies among countries (especially monetary and exchange policies), the current time is favourable for LAC countries to strive toward an integration that transcends foreign trade and the facilitation of this exchanged, which has been the main goal of regional agreements and free trade agreements over recent decades. The elements that have enhanced their productive relation, or that may render this bond among countries more feasible at the regional or subregional level, are diverse:

i) Investment in infrastructure, simplification of customs procedures (the establishment of single windows, automation of customs procedures, among others), and transportation improvement have been significant and, even though they have been designed mainly for intra-regional trade, they are also essential for joint production. Some outstanding

examples include the physical infrastructure of the Mesoamerica project of IIRSA in South America, but the task being faced by LAC to complete its physical interconnection is still huge.

ii) A second source of stimulus for this higher integration and that, in this case, happens “de facto”, comes from investments by trans-Latin and multinational companies. These

iii) investments are made in very diverse areas, notably including infrastructure, services (banks, supermarkets, telecommunications, etc.), and manufactured products (chemicals, petrochemicals, various types of food, beverages, textiles, and clothing, electronics, different types of services, among others). Investments by trans-Latin companies have rapidly grown and in 2010 they accounted for 10% of total FDI received by LAC. Investments from multinational corporations have been more variable, but always very significant. This activity happens practically spontaneously, and investments by a multinational firm in different LAC countries that produce different goods or services in a value chain contribute with regional integration. If the activities of trans-Latin and multinational companies were brought more into line with the strategic development vision of countries, this economic momentum could be better taken advantage of (for instance, encouraging companies to train, generate local suppliers, increasing their R&D activities, invest in sectors that are lagging behind, etc.).

iv) A third element that contributes with integration is the association between public and/or local companies and other companies from other nations to create value chains. This is the case, for instance, of Petrobras, which has provided huge stimulus to the transformation of SMEs into its suppliers, not only in Brazil but also in the MERCOSUR region. Likewise, it is worth mentioning the creation of a thread-textile-clothing chain devised by three governments and created by them, i.e. Bolivia, Cuba and Venezuela, with the participation of public and private companies.

v) Programmes especially designed by subregional entities to achieve productive integration through the involvement of the public and private sectors are a fourth supporting force for said integration. This is the case of the Productive Integration Programme of MERCOSUR in 2008, which aims at the joint development of new competitive advantages based on the complementation among countries by deepening intra-sectoral specialization. This programme also grants importance to the integration of SMEs in general and to regional productive processes in the case of enterprises in small-sized economies.

v) Programmes specifically designed with the aim of overcoming asymmetries are particularly interesting. This is the case of the Structural Convergence Fund of MERCOSUR (FOCEM). This initiative finances projects that contribute with growth in the areas of MERCOSUR that are lagging behind.

vi) A sixth group of integration initiatives that contribute with the productive development and have a positive social impact, albeit a much higher potential, is the one focused on land border areas among LAC countries. These are the areas with the highest degrees of poverty and marginalization of the population, including indigenous sectors that have scarce access to public services and formal jobs, especially in faraway areas.

The combination of productive development policies at the regional level, like the ones already described in these conclusions, along with a strengthening of those elements facilitating regional integration, may make a true difference in the regional efforts to take a leap in their development level. Many of the examples of subregional integration already mentioned may be a reference for other subregions in LAC or for the entire

region. However, regarding both this aspect and the sharing of industrial policies across national borders require not only economic will but also political will from both public and private sectors in the region.

## BIBLIOGRAPHY

- ALIDE, Latin American Association of Development Financial Institutions. 1997. Available from [www.alide.org.pe](http://www.alide.org.pe).
- Amsden, Alice H. 2005. Industrialización en el mercado de la UMC. In *Experiencias de crisis y estrategias de desarrollo*, edited by Nadal y Aguayo. México: El Colegio de México.
- Becattini, Giacomo. 1979. Dal settore industriale al distretto industriale. Alcune considerazioni sull'unità di indagine dell'economia industriale. *Rivista di economia e politica industriale* 5 (1):7-21.
- Bianchi, Patrizio and Sandarine Labory. 2006. *International Handbook on Industrial Policy*. Massachusetts: Edward Elgar.
- Brown, Domínguez y. 2008. "Políticas e instituciones de apoyo a la pequeña y mediana empresa en México". In *Políticas de apoyo a las Pymes en América Latina*, edited by Ferraro Carlos y Giovanni Stumpo. Santiago, Chile: Libros de la CEPAL.
- Bruck, N. y Armando M. Carvalho Jr. 2005. A política industrial e o Bndes. *Revista do bndes* 12 (23).
- Brusco, Sebastiano. 1982. The Emilian Model: Productive Decentralisation and Social Integration. *Cambridge Journal of Economics* 6 (2):167-84.
- Calderón, Alcas Romy. 2005. La banca de desarrollo en América Latina y el Caribe. In *Financiamiento del desarrollo*, edited by ECLAC. Santiago de Chile.
- Carvalho, Jr., A.M. . 2005. A política industrial o Bndes. *Revista do Bndes* 12 (23).
- CEPAL. 1994. El regionalismo abierto en América Latina y el Caribe. La integración económica al servicio de la transformación productiva con equidad. Santiago de Chile.
- . 2009. *Panorama de la inserción internacional de América Latina y el Caribe, 2008-2009; Crisis y espacios de cooperación regional*. Santiago de Chile.
- . 2010. *La Inversión Extranjera Directa en América Latina y el Caribe*. Santiago de Chile.
- CEPAL 2011a. *Panorama de la inserción internacional de América Latina y el Caribe; 2010-2011*. Santiago de Chile.
- CEPAL 2011b. The Dynamics of Sustained Growth and Development among Small Developing States in Central America and the Caribbean.
- CEPAL, IDRC. 2007. *Progreso técnico y cambio estructural en América Latina*. Santiago de Chile: Naciones Unidas.
- Crocco, Marci y Fabiana Santos. 2011. "El sistema de fomento a las micro y pequeñas empresas en el Brasil". In *Políticas de apoyo a las Pymes en América Latina*, edited by Ferraro Carlos y Giovanni Stumpo. Santiago, Chile: Libros de la CEPAL.

- Dabla-Norris, Era, Giang Ho, Kalpana Kochhar, Annette Kyobe and Robert Tchaidez (2013), "Anchoring Growth: The Importance of Productivity-Enhancing Reforms in Emerging Market and Developing Economies", *IMF Staff Discussion Note*, December.
- Dahlman, Carl J. 2009. "Growth and Development in China and India: The Role of Industrial and Innovation Policy in Rapid Catch-Up". In *Industrial Policy and Development: The Political economy of capabilities accumulation*, edited by Mario Cimoli, Giovanni Dosi and Joseph Stiglitz: Oxford University Press.
- Dantas, Eva and Martin Bell 2006. The Development of Firm-Centred Knowledge Networks in Emerging Economies: the Case of Petrobras in the Offshore Oil Innovation System in Brazil *DRUID Summer Conference 2006*:1-36.
- De Bandt, Jacques 2006. "Do informational service activities translate into new industrial policy requirements?" In *International Handbook on Industrial Policy*, edited by Patrizio Bianchi and Sandrine Labory. Northampton, MA, USA: Edward Elgar Cheltenham, UK.
- De María y Campos, Mauricio, Lilia Domínguez, Flor Brown y Armando Sánchez (2009), "El desarrollo de la industria mexicana en su encrucijada: Entorno macroeconómico, desafíos estructurales, política industrial". IIDSES-UIA. Mexico. September.
- De Negri, João Alberto. 2010. Poder de Compra da PETROBRAS: Impactos Econômicos nos seus Fornecedores. Edited by IPEA - Petrobras.
- Banco Interamericano de Desarrollo (2005). El Grupo BID y la Pequeña y Mediana Empresa (1990-2004). <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=710253>.
- Devlin, Robert y Graciela Moguillansky 2010. *Alianzas público-privadas*. Santiago de Chile: ECLAC and Ibero-American General Secretariat.
- Evans, Peter. 1995. *Embedded Autonomy, States and Industrial Transformation*. Princeton: Princeton University Press.
- Falck-Zepeda, Jose Benjamin; Smale, Melinda; Zambrano, Patricia; Gruère, Guillaume P.; Matuschke, Ira; Horna, Daniela; Nagarajan, Latha; Yerramareddy, Indira; Jones, Hannah (2009), Measuring the economic impacts of transgenic crops in developing agriculture during the first decade : Approaches, findings, and future directions. Food policy review 10. Washington, D.C. International Food Policy Research Institute (IFPRI).
- Ferraro, Carlo and Giovanni Stumpo (2010), Políticas de apoyo a las PYMES en América Latina; Entre avances innovadores y desafíos institucionales, Libros de la CEPAL, 107.
- FOCEM. 2007. Fondo para la Convergencia Estructural del MERCOSUR <http://www.mecon.gov.ar/peconomica/docs/focem.pdf>.
- Franco, Rolando, Martín Hopenhayn and Arturo León (2011), "Crece y cambia la clase media en América Latina: una puesta al día", *Revista de la CEPAL* N° 103, Abril.

- Giuliani, Elisa, Morrison Andrea and Roberta Rabellotti. 2011. Innovation and technological catch-up in the wine industry In *Innovation and Technological Catch-Up. The Changing Geography of Wine Production*, edited by Elisa Giuliani, Morrison Andrea and Roberta Rabellotti. Massachusetts: Edward Elgar Publishing.
- Hermann, Jennifer. 2010. Los bancos de desarrollo en la "era de la liberalización financiera": el caso del Bndes en Brasil. *Revista de la Cepal* 100 (193-208).
- Hobday, Mik. 2011. Learning from Asia's Success Beyond Simplistic "Lesson-Making". In *World Institute for Development Economics Research* edited by the United Nations University.
- Katz, Jorge. 2007. Cambios estructurales y ciclos de destrucción y creación de capacidades productivas y tecnológicas en América Latina *The Global Network for Economics of Learning, Innovation, and Competence Building System*. [www.globelics.org](http://www.globelics.org).
- Krugman, P. 1998. What's new about the New Economic Geography? *Oxford Review of Economic Policy* 14 (2):7-17.
- Lazo Marín, Francisco (2013), "Política Industrial, Transformación Productiva para Impulsar la Inversión y el Desarrollo", ppt, SELA, Caracas, October.
- López, Andrés, Daniela Ramos and Iván Torre 2009. Las exportaciones de servicios de América Latina y su integración en las cadenas globales de valor. <http://www.eclac.org/publicaciones/xml/3/35963/DocW37fin.pdf>.
- Marshall, Alfred. 1890. *Principles of Economics*. Edited by Macmillan. London.
- Marshall, Alfred 1919. *Industry and Trade*. Edited by Macmillan. London.
- Martínez- Piva, Jorge Mario and Martha Cordero. 2009. Panamá y el proceso de integración centroamericano. In *LC/MEX/L.946*, edited by ECLAC. Mexico.
- Martínez Piva, Jorge Mario, Ramón Padilla, Claudia Schatan and Verónica Vega 2010. La Industria Cinematográfica en México y su Participación en la Cadena Global de Valor. *Serie Estudios y Perspectivas*, December.
- Martínez, Ortiz Astrid and José Antonio Ocampo. 2011. *Hacia una Política Industrial de nueva generación para Colombia* Colombia: Coalición para la promoción de la industria colombiana.
- Mercado, García Alfonso 2011. Espacios y lineamientos para una nueva política de crecimiento y productividad en México. In *Nueva estrategia de industrialización*, edited by José Luis Calva (Coordinator). Mexico: Juan Pablos Editor, S.A.
- Ministry of Productive Development and Plural Economy of Bolivia (2013), "Articulación Productiva" ppt, SELA, Caracas, Octubre.
- Morfín, Maciel Antonio 2009. Banca de desarrollo y el apoyo al acceso (Mexico). In *Financiamiento del desarrollo*, edited by ECLAC. Santiago de Chile.

- Navia, Patricio and Andrés Velasco 2003. "The Politics of Second Generation Reform". In *After the Washington Consensus, Restarting Growth and Reform in Latin America*, edited by Pedro-Pablo Kuczynski and John Williamson. Washington DC. Institute for International Economics.
- Ocampo, José Antonio 2001. Presentation made at the Seminar "La teoría del desarrollo en los albores del siglo XXI", organized by ECLAC to mark the 100<sup>th</sup> anniversary of Raúl Prebisch  
<http://www.cepal.org/prensa/noticias/discursossecretaria/6/7996/Prebisch-rev-JAO28-08.pdf>
- Pages, Serra Carmen. 2010. The Age of Productivity: Transforming Economies from the Bottom Up en *Banco Interamericano de Desarrollo*.
- Pérez, Carlota 2010. Dinamismo tecnológico e inclusión social en América Latina: una estrategia de desarrollo productivo basada en los recursos naturales. *Revista de la Cepal* 100:123-145.
- Porter, Michael. 1990. *The Competitive Advantage of Nations*. Edited by Macmillan. London.
- RICYT, Red de Indicadores de Ciencia y Tecnología Iberoamericana e Interamericana. 2001. Available from [www.ricyt.or](http://www.ricyt.or).
- Rivas, Gonzalo. 2004. Opciones de la banca de desarrollo en Chile: el "convidado de piedra" del sistema financiero chileno. In *Financiamiento para el desarrollo*, edited by ECLAC. Santiago de Chile.
- SELA. 2010. Tendencias y Oportunidades de la Cooperación Internacional para Apoyar el Desarrollo de las Pequeñas y Medianas Empresas en América Latina y el Caribe.
- . 2011. Informe sobre el Proceso de Integración Regional, 2010 - 2011, Venezuela.
- Sepulveda, Leandro and Ash Amin. 2006. Decentralizing industrial policies: threat or opportunity in developing countries? In *International Handbook on Industrial Policy*, edited by Patrizio y Sandrine Labory Bianchi. Cheltenham, Northampton: Edward Elgar.
- SICA, SIECA and CENPROMYPE 2010. Taller Regional, Definición de la Agenda de Articulación de Políticas y Programas MIPYME en Centroamérica.
- Sztulwark, Sebastián 2011. "Políticas e instituciones de apoyo a las pymes en la Argentina", . In *Políticas de apoyo a las Pymes en América Latina*, edited by Ferraro Carlos y Giovanni Stumpo. Santiago, Chile: Libros de la CEPAL.
- Titelman, Daniel 2003. La banca de desarrollo y el financiamiento productivo. In *Financiamiento del desarrollo*, edited by CEPAL. Santiago de Chile.
- Ueki, Yasushi, Masatsugu Tsuji and Rodrigo Cárcamo Olmos 2005. "Tecnología de la información y las comunicaciones (TIC) para el fomento de las pymes exportadoras en América Latina y Asia oriental", ed CEPAL Documento de Proyecto.

