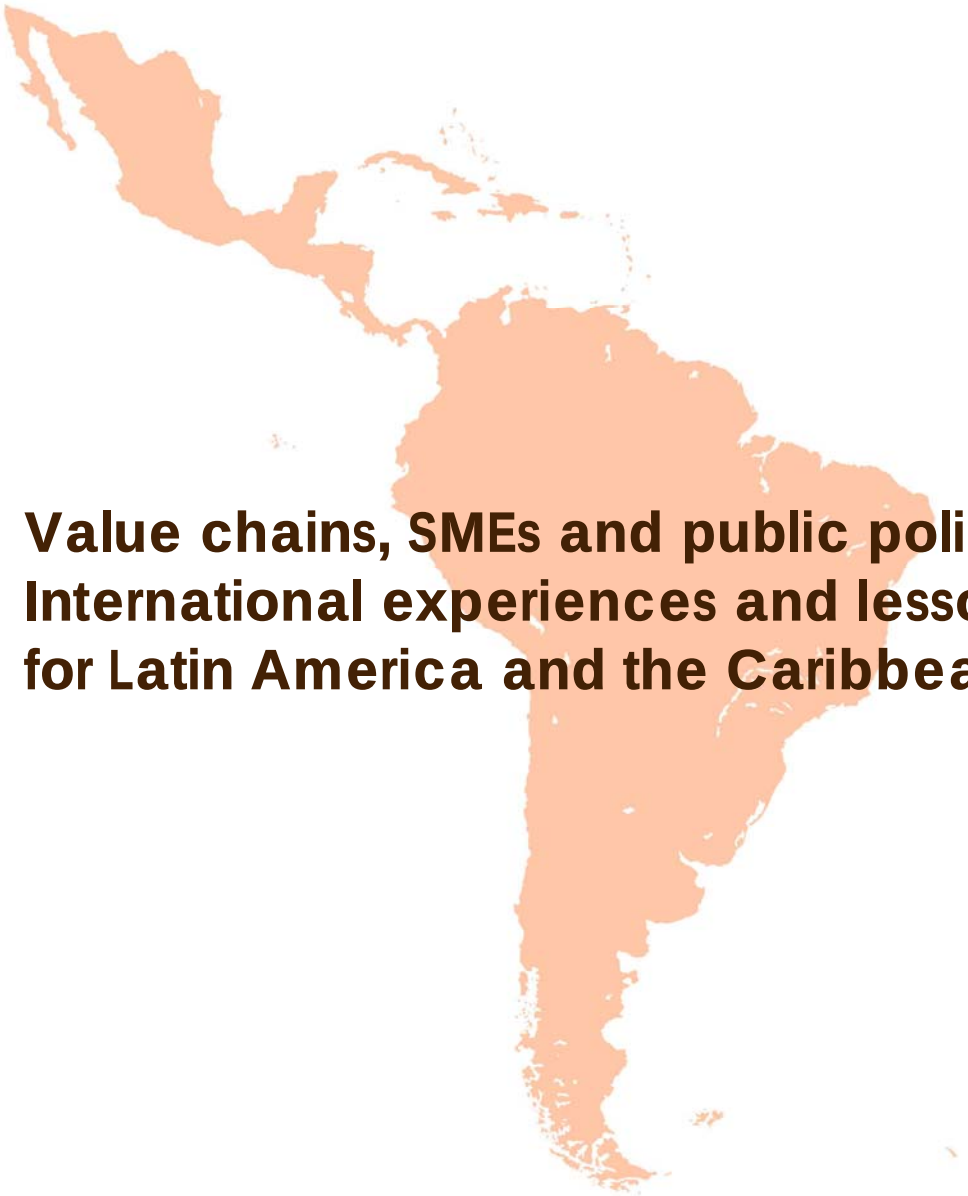
Sistema Económico
Latinoamericano y del Caribe

Latin American and Caribbean
Economic System

Sistema Econômico
Latino-Americano e do Caribe

Système Economique
Latinoaméricain et Caribéen



Value chains, SMEs and public policies. International experiences and lessons for Latin America and the Caribbean

Intra-Regional Relations

Forum on the design of public policies: SMEs insertion into global and regional value chains
Caracas, Venezuela
September 2012
SP/FDPP: IPYMESCVGR-DT N° 2-12

Printed in the Permanent Secretariat of SELA, Caracas, Venezuela.

C O N T E N T S

EXECUTIVE SUMMARY

This document has several objectives; (1) analyze relevant experiences of enterprises' insertion into global and regional value chains inside and outside Latin America and the Caribbean, underlining the cases of small and medium-sized enterprises (SMEs); (2) describe the fundamental features, the instruments and the performance of public policies that support SMEs so as to encourage their insertion into global and regional value chains; and (3) based on the former objectives, submit recommendations to the governments of the Member States of SELA on the subject of policies as a means to further promote the insertion of their SMEs into global and regional value chains.

SMEs are economic agents that feature a strategic role in economic growth with social integration because they are a common source of employment and income. Homogenization of technological knowledge and development of a critical mass for productive innovation in a country are achieved by means of an articulation among different-sized enterprises. When that critical mass arises, a country ceases having features of Periphery and becomes a Centre country, as stated by Mr. Raúl Prebisch. According to this great mind of the Latin American development, the Centre is mainly diversified and homogeneous, while the Periphery is specialized and heterogeneous. The Centre is homogeneous because it has a medium stratum composed by medium-sized, innovative and highly productive enterprises. Some of them make a transition to the large-sized enterprise stratum, which has recently been the case of Apple, Microsoft, Hewlett-Packard, and many others. The Periphery is specialized and heterogeneous because technological knowledge is converged on large exporting enterprises while means of production from different eras co-exist in society; and the medium stratum of modern SMEs is lacking.

There is an abysmal contrast among the SMEs based in Latin American and the Caribbean and those based in Europe, Japan and other Asian-Pacific countries. It is undeniable that there is not a medium threshold among large, modern enterprises; and small, informal enterprises, which represent most part of the Latin American and Caribbean micro, small and medium-sized enterprises. The lack of a significant number of efficient and innovating SMEs leads to a poorly integrated productive system, and as a result, there are fewer opportunities for interchange of technological knowledge and dynamic inter-enterprise relations, which are two critical factors in the exporting performance of more dynamic economies.

The international experiences point out that SMEs participation in dynamic trends of trade and global production requires a considerable effort regarding management and financial resources; productive and organizational capacity to meet international quality standards; generation of innovation and protection of intellectual property. SMEs need to be supported by their governments in order to overcome these challenges.

As SELA has already analyzed in previous documents, the phenomenon that involves the fragmentation of the production system of a good into the elements that compose it and the distribution of these elements to several countries to be assembled afterwards in other regions, creating trade flows as a result, has increased in high rates in the last 20 years; incorporating many products and countries (SELA 2011.) Recently, organizations such as the WTO (World Trade Organization) and the World Bank have acknowledged structural changes in the nature of trade, which has been transformed from a good and services trade into a "task" trade. As every field including enterprises' strategies, empirical work on value chains is based on case studies with conclusions that are targeted for a given enterprise or industry. There are not aggregated data that facilitate an adequate quantification. The WTO, the World Bank, the OECD (Organization for Economic Co-

operation and Development), alongside other United Nations development agencies and statistical offices have just started working together in order to collect data on trade in value added that can be compared on an international scale.

It is worth noting the importance of the value chain approach. That way, industrial policymakers can have a better understanding of the complexity and heterogeneity of the activities involved in the process of adding value throughout the production of a good or service. In special, the generator centre of value is transferring from product manufacturing to activities of design and marketing services, logistics, and introduction of new products, just to mention a few examples. The joint or systematic vision offered by the analysis of a value chain can help decision makers to generate more effective industrial development policies, straying from pure manufacturing activities, that is to say, activities focused on the physical manufacturing of a good.

There are three subject matter groups concerning the risks and opportunities of participating in global value chains that should be underlined. First, literature on global value chains highlights the distributive problems related to the existing power asymmetries throughout the chain. The way of coordinating inter-enterprise relations or the value chain governance affects the generation, transfer and dissemination of knowledge among the chain participants. Secondly, access of SMEs in developing countries to global value chains depends on factors related to the enterprise sphere (which include compliance with quality standards settled by the buyers); and also on factors related to the local and national sphere (transport, energy and communications infrastructure, tax structure, and trade and investment protection regimes, and so forth.) Nevertheless, the organization patterns and the level of hierarchy that guide inter-enterprise relations in the global value chain are the elements that explain the creation of access barriers and also the distribution of risks and benefits among the participant actors. For instance, global buyers, such as the Walmart retail chain, can manoeuvre to limit the activities of the SMEs in developing countries to those involving imported material assembling, which are the simplest operations and intensive in low qualified work. These tasks are quickly transferred to other countries with lower labour costs and less strict regulations.

The third subject matter group has to do with the fact that value chain, as an analytical concept, has a physical correspondence in suppliers' global chains of parts, equipment and services, or in productive networks that supply the required tangible and intangible inputs for the manufacturing of parts and the final good in each production stage. The insertion of an enterprise into a suppliers' global chain has a double reading. An enterprise can be integrated into a global chain as a supplier of intermediate goods, services, knowledge, or "tasks"; or it can also be integrated as a buyer of the same intermediate goods, services, knowledge, or "tasks"; the same way an enterprise can be integrated into traditional trade currents as a goods buyer and/or seller. The novelty is that enterprises have more options to reduce their costs by using suppliers' global chains.

The flip side of the coin has to do with the impact of extra-territorial relations among enterprises in each country's inter-industrial nexus and in the dynamics of employment creation. Cost reduction in the enterprise sphere can imply a higher cost for the country's economy in terms of disintegration of local value chains. In other words, a deeper insertion of an enterprise into a global value chain can cause discontinuity in a country's internal value chain.

What lessons can be learnt from successful experiences of deeper and better insertion of SMEs into global value chains? Perhaps to inquire about which is the metric to identify a successful insertion. For an enterprise, it is not enough to insert itself into a global value

chain. The quality of that insertion is also an important factor to measure the sustainability of the enterprise's insertion strategy.

An important element for the success of exporting SMEs that participate in global value chains is the creation and expansion of dynamic industrial agglomerations, characterized as industrial districts or clusters, productive complex or arrangements. Productive agglomerations are highly effective to provide economies of scale that SMEs have no access to in the enterprise sphere because of their size. In the literature, industrial clusters are presented as a key element for SMEs' surviving and for their integration into large global value chains.

On the subject of participation in global value chains, as exporters or importers, all the countries of Latin America and the Caribbean are linked up directly or indirectly with different chains headed by production enterprises; by large global retailing enterprises; or by large trading and distribution companies. However, overall, the quality of insertion into manufacturing chains is low. A large number of countries have inserted themselves into global value chains in the form of subcontracting for tasks intensive in low qualified work. That is the case of the *maquila* industry in countries like Mexico, Costa Rica, El Salvador, Honduras, Jamaica, Dominican Republic, among other countries whose governments established incentives to foster direct foreign investment in sectors such as textile and electronic. Still, these countries have not managed to increase internal integration with a further fostering of production links.

South American countries are inserted into value chains in the field of natural resources, but they have not progressed in the promotion of regional suppliers' networks for the manufacturing of those resources.

The main challenge is to figure out how to make a transition from the stages requiring less qualification and lower productive integration towards sectors requiring a more intensive knowledge and promoting a deeper integration into internal productive chains. In other words, the challenge is to figure out how to retain the value being generated throughout the chain and that is being held by global leading enterprises. This retention of regional value should be an issue of greatest concern for decision and policy makers.

Cooperation among enterprises is a recurrent subject matter in the literature on value chains, despite that, in many cases, relations among leading enterprises, national enterprises and SMEs are authoritarian and based on subordination. Asia has been the platform of regional value chains; in the beginning, starting from the strategy of Japanese enterprises. As further developed in the document, in different moments, the governments of several Asian countries, and more recently of China, have fostered cooperation among their countries' enterprises, among different-sized enterprises, among enterprises of complementary industries, and among neighbouring countries' enterprises throughout public policies; with the help of a convergent vision from the heads of enterprises. They are common sense measures that, in spite of the deep political divergences among Asian countries; the lack of a shared language; and resentments due to their colonial past, contributed to a *de facto* integration of different Asian regions, and to the establishment of regional value chains.

As suggested in a previous document by SELA (2011), in Latin America and the Caribbean there are great deficiencies regarding infrastructure and logistics that cause high transport and distribution costs, and also an elevated accumulation of stocks, thus inhibiting the establishment of regional suppliers' chains. Internal transport is basically

unimodal, with goods being transported mostly by trucks, and secondly by railroads; while external trade is done basically through maritime channels.

Nevertheless, productive integration in Asia was not promoted by its modern infrastructure. On the contrary, an incipient integration was progressively demanding further investment in infrastructure. The process observed in Asia was a creative process with breaches between supply and demand of transport, energy, and telecommunications infrastructure. Transactions among enterprises from different countries and among enterprises from the same region forged an investment demand in order to overcome the bottlenecks generated by the expansion of the economic activity, as Albert Hirschman explained it more than 50 years ago. It is expected that that dialectic relation between potential demand and long-term investment becomes a reality in Latin America and the Caribbean in a near future, as it was suggested by initiatives like the Mesoamerica Project and the IIRSA (Initiative for the Integration of Regional Infrastructure in South America.)

As a result of changes in the organization of world production and trade, exporting enterprises of the region are directly or indirectly involved in a suppliers' network or a global value chain of some kind. In most part of the cases, enterprises produce locally for large national exporting enterprises or multi-nationals that form other nods in the complex production and addition of value networks and chains. Knowledge on those production and world trade "maps" is even more incipient. Nonetheless, every large leading enterprise has a deep understanding of its value chain, and that information constitutes an important asset in the enterprise's global competiveness.

Concerns about local and regional retention of value generated in a productive chain are not a novelty, but it can be remarked that given the strong international competition, the need of formulating and implementing policies addressed to productive, organizational and innovation training of SMEs as a means to improve international insertion of Latin American and Caribbean economies is even more urgent and demanding.

Improving the international insertion of Latin American and Caribbean economies has been the key concern of SELA's papers since its creation. Also, SELA has gain wide experience on the subject of globalization and SMEs' modernization.

In order to support the region's governments in their efforts to improve the capabilities of the SMEs based in their countries, suggestions were made for SELA to:

1. Perform systematic studies on the region's initiatives for creating industrial *clusters* and their insertion into global value chains.
2. Conduct systematic studies oriented to analyze in depth the Asian experience regarding the establishment of regional productive networks and the improvement of relations among SMEs and large-sized enterprises.
3. Carry out systematic studies concerning the efficiency of public policies' programmes and public-private alliances related to the modernization and development of SMEs, and their internationalization.
4. Foster opportunities for cooperation and evaluation in other regional international cooperation agencies as means to achieve greater consistency in their research papers on global value chains, by the systematization of concepts and research methods.

5. Move forward in the establishment of an information system on suppliers' regional chains initiatives, specifically on product chains based on natural resources, by identifying the main obstacles for the establishment of cooperative relations among enterprises in the region's countries.
6. Promote spaces for dialogue and debate about how the purchasing power of large natural products exporting enterprises affects the establishment of regional suppliers.
7. Perform systematic studies on the main global value chains to which Central American and Caribbean countries are integrated in order to identify the governance, the power relations, and the opportunities for knowledge generation and interchange, and also to identify means to improve and increase capabilities.
8. Systematize and disseminate information on the metric to analyze successful cases of insertion of regional enterprises into global value chains.
9. Continue the analysis and dissemination of studies concerning the bottlenecks in the physical infrastructure (transport, telecommunications, and electricity), and the progress of initiatives such as IIRSA and the Mesoamerica Project.
10. Disseminate the researches' results alongside the governments and academic media.

I. INTRODUCTION: THE MISSING MIDDLE BETWEEN THE COMPANIES IN LATIN AMERICA AND THE CARIBBEAN

This document has several objectives; (1) analyze relevant experiences of enterprises' insertion into global and regional value chains inside and outside Latin America and the Caribbean, underlining the cases of small and medium-sized enterprises (SMEs); (2) describe the fundamental features, the instruments and the performance of public policies that support SMEs so as to encourage their insertion into global and regional value chains; and (3) based on the former objectives, submit recommendations to the governments of the Member States of SELA on the subject of policies as a means to further promote the insertion of their SMEs into global and regional value chains.

There is strong evidence that small and medium enterprises (SMEs) are essential in an economic development model with social inclusion, since they are significant sources of employment and income. In all developed and developing countries, SMEs account for the absolute majority of companies, generating more than half of formal jobs, higher than their proportion in sales and added value. Nevertheless, the international experience indicates that the participation of SMEs in dynamic trade flows and global production requires significant managerial and financial resources, and productive and organizational capacity to achieve international quality standards, generate innovation, and protect intellectual property. To meet these challenges, SMEs require the support of their governments (UNCTAD 2010a).

The contrast between Latin American and Caribbean SMEs, and those in Europe, Japan, or other Asia-Pacific countries is abysmal. It cannot be denied that the region lacks an intermediate threshold between large modern enterprises and small informal enterprises, which constitute the majority of the micro, small, and medium Latin American and Caribbean enterprises. The lack of a significant number of efficient and innovative SMEs, the "missing middle", leads to a poorly integrated productive system, reducing the chances to exchange technological know-how, and to establish dynamic relations between enterprises, critical factors in the export performance of the more dynamic economies.[1]

[1] UNCTAD suggested this title (The Missing Middle) in one of its documents on SMEs (UNCTAD 2001).

The concept of value chains is not new, but became more relevant in the early 1990s, with the discussion about the nature and dynamics of globalization. Value chains are an analytical concept that covers all activities related to the creation, production, marketing, consumption, and disposal of goods or services. The concept was disseminated by Michael Porter (1985). In his work, an enterprise is defined as a set of activities, and a value chain is an analytical tool to clarify the position of the enterprise with respect to its competitors.

The different segments of a value chain may be contained within a country, or may be distributed among different countries, thus forming a global value chain. One of the advantages of looking at economic activities from the perspective of value chains is that it provides a vision that integrates resources and markets, stressing the integration between local economies and the regional and international markets. This document won't cover local value chains, except as part of the gradual evolution of enterprises and production, and within the context of industrial *clusters*. The document focuses on global manufacturing value chains, and regional manufacturing value chains.

As SELA analyzed in previous documents, the fragmentation of the production of goods into their constituting elements, their distribution between the different countries, and the assembly of parts and components in other regions, giving rise to trade flows, increased rapidly in the last twenty years, and added a large number of products and countries (SELA 2011). Recently, organizations such as the World Trade Organization (WTO) and the World Bank acknowledged the structural changes that have occurred in the nature of trade, transforming it from a trade of goods and services into a trade of "tasks".[2] Like any field that includes entrepreneurial strategies, the empirical work on value chains is based on case studies, and the conclusions are specific to enterprises and industries, and there are no aggregate data for a proper quantification. The WTO, the World Bank, and the Organization for Economic Cooperation and Development (OECD), together with United Nations development agencies, and statistics departments recently started joining efforts to collect trade data based on added value that can be compared internationally (SELA 2011).[3]

The value chain approach is important for industrial policy makers to better understand the complexity and heterogeneity of the activities involved in the process to add value throughout out the production of a good or service. Specifically, the value generating centre moves from manufacturing towards service activities in design, marketing, logistics and new product introduction, to mention just a few examples. The systemic perspective that the value chain analysis provides may help decision makers formulate more effective industrial development policies, and move away from manufacturing activities alone, i.e., focusing on the physical production of goods.

Three groups of topics related to the risks and opportunities of participating in global value chains must be emphasized. First, the literature on global value chains underscores the distribution problems related to power asymmetries throughout the chain. (Gereffi, Humphrey and Sturgeon 2005; Humphrey and Schmitz 2000). The way to coordinate relations between companies, or value chain governance, affects the generation, transference, and dissemination of knowledge between the participants in the chain.

---

[2] See SELA 2011 document for the references.

[3] In March 2012, the World Bank, ECLAC, and IDB organized a workshop on quantifying trade as added value in the Americas (see the information at http://www.cepal.org/comercio/conference_LAC_GVC_MX_mar_2012/).

Second, the access of developing country's SMEs to global value chains depends both on entrepreneurial factors (including compliance with quality standards established by buyers) as well as on local and national factors (transportation, energy and communications infrastructure, tax structure, and trade and investment protection regimes, among others). However, organizational patterns and hierarchy levels guide the relations between companies in the global value chain, which explains the creation of access barriers, as well as the distribution of risks and benefits among participating actors. For example, global purchasers like *Wal-Mart*, may manoeuvre to confine the activities of developing country's SMEs to simpler, unqualified labour intensive operations, to assemble imported materials, which are quickly transferred to other countries with lower labour costs and more relaxed regulations.

A third group of topics refers to the fact that as an analytical concept, value chains have a physical correspondence in the global chains of parts, equipment, and services, or productive networks suppliers, which in every productive phase supply the necessary tangible and intangible products to manufacture parts and the final product. The insertion of a company in a global supplier chain has a double construal. A company may be integrated to the global chain as a supplier of intermediate goods, services, knowledge or "tasks", or may be integrated as a purchaser of those same intermediate goods, services, knowledge or "tasks", just as in the traditional trade flows, where a company may be integrated as a purchaser and/or seller of merchandise. What is new is that using global supplier chains companies have more options to reduce costs (Baldwin 2011). The other side of the coin is the impact of extra-territorial relations between companies in the inter-industrial links within each country, and the job creation dynamics. Cost reductions within a company may imply a higher cost for the country's economy, in terms of the disintegration of the local value chains.

What lessons can be drawn from the successful experiences of a greater and better insertion of SMEs in global value chains? Maybe asking what measure is used to identify a successful insertion.[4] For a company, it isn't enough to enter a global value chain. The quality of the insertion is important to measure the sustainability of its insertion strategy.

In general, as will be described in the next section, the permanence of SMEs in productive activities has been contingent on factors external to the company, to which the successful company could adapt. There are two factors that condition the technology and the foreign purchase strategies of large enterprises. It could be said that the success of SMEs in entering global trade and production flows has hinged mainly on the technological characteristics of its industries, and the strategies of their large enterprises, generating or reducing barriers to access those markets. The best example of a positive symbiosis between large enterprises and SMEs, in the creation of integrated production and trade networks is found in East and Southwest Asia, in the model known as the flying geese.

The technological characteristics of production determine the possibilities of each industry to separate the productive chain into independent "tasks" that can be executed by independent enterprises. In turn, the strategies of large enterprises, conditioned by the economies associated to the industries (scale, scope, learning, and knowledge) define the limits between hierarchy and market as mechanisms to coordinate their own transactions. In other words, at different historical moments, the technological and economic factors affect the decisions made by enterprises about whether it is convenient

[4] See the presentation by Timothy Sturgeon at the Seminar "Latin America's Prospects for Upgrading in Global Value Chains", El Colegio de Mexico, March15-16, 2012, (http://www.cepal.org/comercio/conference_LAC_GVC_MX_mar_2012/).

for them to produce some goods and services within the enterprise (hierarchy), or if they must purchase those goods and services from others, beyond corporate borders. After deciding to purchase goods and services from other enterprises, the next decision is to subcontract the production of that good or service to enterprises located in the country or abroad.[5]

An important component of the success of exporting SMEs that participate in global value chains is the creation and expansion of dynamic industrial clusters, characterized as industrial districts or clusters, productive complexes or arrangements. Productive clusters are very effective in providing the economies of scale, to which SMEs don't have access, due to their size. Industrial *clusters* are presented as the locus for the survival of SMEs and their integration to the large global value chains.

Studies about industrial districts and clusters form a multidisciplinary literature that stresses the territory as an axis that organizes the activities of contemporary SMEs. Studies about the industrial districts of Italy and other countries provide a better understanding about the division of work between enterprises, as well as the knowledge transfer mechanisms between them, based on trust and cooperation, constituting their informal institutional capital. However, the literature focuses on the domestic networks, and doesn't clarify the links with foreign marketing networks, the topic of this document. Policies supporting the international insertion of SMEs precisely try to affect those relations and nodes, so as to promote a virtuous cycle of specialization, international integration, and growth with inclusion.

Economic policies directed towards SMEs try to increase productive efficiency within the enterprise by solving market lacks in training, technology, and credit. Nevertheless, analyzing the historical experience of industrial clusters, there are two factors that are not always taken into account when building the productive, technological, and institutional capacities of SMEs: *time and space*. Capacity is built with time, and in a specific territory: the instruments take long to mature. In the creation of the Italian industrial districts, for example, studies mention the role of creating quality technical schools in the 1930s which bore their fruits more than twenty years later. On the other hand, SMEs develop in a specific space or territory. Investments in infrastructure and the access to credits from state institutions at the local level were other elements in the success of SMEs in Italy.

In Latin America and the Caribbean, except for the more advanced economies, successful industrial clusters are unique and usually in the natural resources area (Artola and Parrilli 2006; ECLAC 2005; Zuñiga-Arias 2011). Similarly, with the exception of Brazil and Chile, a lack of continuity in public policies that support productive complexes and SMEs, explain why there are so few long lasting cases in the region (Ferraro ed. 2010; Ferraro and Stumpo (eds.) (2010).

Regarding participation in global value chains, whether as exporters or importers, all the region's countries are directly or indirectly linked to different chains led by producing companies or by large marketing and distributing companies. However, in general the quality of insertion in global manufacturing chains is low. Many countries have entered global value chains as subcontractors for labour intensive and/or natural resources tasks. Such is the case of the *maquilas* in Mexico, Costa Rica, El Salvador, Honduras, Jamaica, and the Dominican Republic, among others, whose governments created incentives to attract direct foreign investment in areas such as textiles and electronics (Prochnik, editor

[5] The literature about the borders of enterprises is very wide. For references see Ventura-Dias 2011.

2010). However, this has not increased domestic integration to foster local and national productive links.

South American countries participate in value chains in natural resources, but have not moved forward to promote regional networks of suppliers to manufacture those same resources.

The great challenge is how to move from the lower qualification stages and the lowest productive integration level to segments that are more knowledge intensive and promote a greater integration with the domestic productive chains. In other words, maintain the generated value throughout the chain to then be captured by the global leading enterprises. Capturing this value at the regional level should be the concern of decision and policy makers (Pozas 2010).

On the other hand, contrary to Asia Pacific countries, there are no regional value chains in Latin America and the Caribbean. The lack of productive integration between the member states of a regional scheme occurred despite the efforts of the creators of regional integration, like Don Raúl Prebisch, who thought that regional markets would allow incipient enterprises in the 1960s achieve the economies of scale to which they had no access due to limited national markets. Interestingly, what was proposed at the end of the 1950s and beginning of the 1960s were regional production chains. Unfortunately, at that time, Latin America and the Caribbean had no entrepreneurship, infrastructure, or a country with the industrial development of Japan, to lead the creation of such chains.

Productive integration is still restricted to the automotive industry, with low productive integration in the interior of the countries, except for Brazil, as well as between countries.[6] It is necessary to make large investments in road infrastructure, energy, and telecommunications, for the region to participate in the strategic plans of leading enterprises in global value chains.

The document is divided into five sections, including this introduction. Section 2 reviews the background about company size in industrial development, highlighting the historical process that recreated the condition of permanence of SMEs in industrial production. It also briefly describes the Italian industrial districts, and the experience of Japan in the creation of Asian production networks. Section 3 analyzes the most significant international experiences of insertion into global value chains, emphasizing industrial *clusters* and the complex strategic relations between companies in value chains. Case studies about Latin America and the Caribbean in the literature about value chains are reviewed. Section 4 analyzes the conclusions about the political instruments that supported the experiences analyzed. Finally, section 5 presents conclusions and recommendations for SELA Member States.

II. BACKGROUND: THE SIZE OF ENTERPRISES IN THEORY AND HISTORY. DIVISION OF LABOUR, COOPERATION AND COMPETITION IN RELATIONS AMONG ENTERPRISES

To understand relationships between different sized enterprises, it is necessary to keep in mind the internal factors of enterprise that determine the growth of these organizations, as well as external conditioning factors, specific to the industries where they operate. There is no conclusive argument among economists about the effect of a company's size in its relative efficiency. On the one hand, conventional economic theory had difficulties admitting production with increasing returns to the scale, and the resulting

[6] In July 2008, the MERCOSUR Council approved decision CMC n. 12/08, creating the MERCOSUR Group on Productive Integration (GIP) and also detailed the Regional Productive Integration Program (PIP).

appropriation of derivative economies by large enterprises, because these are incompatible with the operation of markets with perfect competitiveness.[7] On the other, among Marxist economists, excessive trust in the manufacturing system and large scale economies led them to undermine small enterprises, giving them a residual and transient role.

When Adam Smith described the mechanism of the "invisible hand" of the market to coordinate the decentralized decisions of economic actors, enterprises were small, relatively autonomous, and unspecialized. The long lineage of classical economists beginning with Adam Smith, and ending in Alfred Marshall, described and analyzed the dynamics of the productive process based on the gradual division of labour, on the cooperation between workers within each company, on the cooperation between complementary companies, and on the competition between rival companies producing the same good.[8]

In what is considered the first industrial revolution, or the first industrialization wave, between 1700 and 1870, the lack of sophistication of technology in textiles, ceramics, and other industries resulted in limited investments. Most machines were simple, and many of their parts were made of wood and leather. Similarly, no specific knowledge was required to assemble them. Craftsmen were capable of constructing and maintaining the machines without technical support. Small enterprises had the same conditions to be as efficient as large enterprises, because both used the same instruments, that is, the same technology. Large enterprises had more machines than smaller ones, but the unit production costs of different sized enterprises were relatively similar. Starting in the first decades of the 19th Century, the gradual mechanization of activities in the textile industry changed the competition conditions between small and large enterprises.[9] Nevertheless, in other industries like food, beverages, and tobacco, small establishments remained competitive.

Since the end of the 19th century, during the creation of the second industrial revolution, large enterprises integrated almost all the productive chain within their own plants. In some industries, this vertical integration went from the production of basic products for goods and services, to their marketing and distribution. As Alfred Chandler (1977; 1990) described, with the railway, the "visible" hand of business administration replaced the "invisible" hand of the market. Businesses grew in size and complexity as a result of the gradual expansion of the market, and the increase in the variety of available goods. The second industrial revolution, forged at the end of the 19th and beginning of the 20th century, based production methods like exchangeable parts, mass production, durable consumption goods, continuous technologies, and mainly the standardization of consumption, was associated to significant changes in the strategies of large enterprises and their administrative structures. During this period, large, vertical and hierarchical enterprises in the United States dominated the world of mass consumption and

[7] To counterbalance the economies of scale, economists proposed that the size of companies created "diseconomies" of scale, that is, the cost of administering and coordinating increasing economic activities.

[8] For Marx, it is cooperation based on labour division and not competition, which constitutes the particular and fundamental form of capitalist production.

[9] Also, technological innovations in transportation made it more accessible and reliable, with steamboats, and starting in 1830, the railway, the massive construction of navigable channels, together with the telegraph and the telephone. The revolution in transportation not only expands market borders, but also the way enterprises operate.

homogeneous products.[10] With their vertical integration strategy, spanning from the production of physical products to services like transportation, financing, and marketing, large enterprises could become diversified horizontally towards related industries, and internationally, in other geographical markets.[11]

During the boom of Chandler's large multidivisional enterprises, SMEs became non-relevant economic actors. For most economists and business administrators, the survival of SMEs in the industrialized world would be at the expense of economic efficiency. Large enterprises incorporated the economies of scale and diversification (*scope*), while reducing the space of SMEs by expanding their borders.

However, in the beginning of the 20th century, Alfred Marshall argued that the advantages of labour division could be obtained not only by large enterprises, but also by the clustering of many small enterprises in a same locality. Marshall tried to solve the dilemma of concentrating the economics of labour division in large enterprises, with the concepts of two types of economies: those that are internal to the enterprise, and those external to them. Regarding external economies, Marshall imagined that the different parts of the productive process could be divided into small plants, rather than being in different parts of the same plant. Thus, the economies derived from an increase in the scale of production of any product are divided into two types: first, those that depend on the general development of the industry (external economies) and second, those that depend on the internal resources of the enterprise, its organization, and the efficiency of its administration (internal economies). For Marshall, many of the economies derived from the use of worker's skills and specialized machines didn't depend on the size of the individual plants, but on industrial knowledge in general (Marshall 1890/ 1920; Becattini 2002).

In his idea of industrial districts, Alfred Marshall included the space, or territorial dimension of the firm, and also highlighted the importance of small enterprises in the growth of local industries. Starting from the differentiation of the economies within the enterprise, and the external, or cluster economies, Marshall concluded that control by a large enterprise in the productive chain of an industry didn't prevent smaller enterprises from being efficient in other industries; and within them, the local or regional integration of a group of specialized and complementary SMEs, because being specialized in different phases of the productive process of the same good allowed them to capture the economies derived from labour division, innovation, and entrepreneurial development. Thus, Marshall concluded that at least for some types of products, there were two equally efficient systems. In one, the productive chain was fragmented within vertically integrated plants, while in the other, the productive chain was fragmented into independent productive units, articulated by input-output relations and the exchange of knowledge, and established in a locality or a cluster of localities (Becattini 2004). In many aspects the present global supplier chains reproduce the economic qualities mentioned by Marshall in the industrial districts of the past.

In the second half of the 20th century, two experiences marked a paradigm in terms of the insertion of SMEs in dynamic trade flows. On the one hand, the industrial districts of Italy, and on the other, the Asian SMEs, particularly those in Japan. At the end of the 1960s and beginning of the 1970s, the industrial district of some areas of Italy (central and

[10] Automotive companies produced between 50 and 80 percent of the total added value within the company itself (quoted by Herrigel and Zeitlin (2010)).

[11] See Chandler 1962, 1977, 1990. For model critics, see Lamoreaux, Raff and Temin, 2002; Langlois 2002 and the references included.

northwest) started to meet successfully the growing demand for differentiated goods, with a quality neo-craftsmanship production model.[12] Between 1970 and 1990, groups of highly specialized SMEs established a significant position in the world markets of traditional sectors, like shoes, leather bags, textiles, clothing, ceramics, furniture, and some machines, with high quality design and confection. Similarly, the strategies of Japanese enterprises first, and later those of the other Asian countries, supported the thesis of the inherent low efficiency of small scale production.

Finally, the ongoing third revolution, promoted by information and communication technologies, and industries that are highly intensive in knowledge, like biotechnology, and nanotechnology among others, is creating new areas for innovative industrial districts, and thus for SMEs (Bellandi 2007). Micro-electronic innovations, the constant changes in information and communication technology, and the reduction in transportation costs reduced the barriers to access markets, which facilitated the entry of the more advanced SMEs to global supplier networks.

The historical experience of Japan in sub-contracting of goods and services from SMEs, through several levels of relations between different sized enterprises, and the effect of these relations in improving the technological capacity of SMEs, is still little known.[13] However, the successful participation of Japanese SMEs in Japan's productive chains, and the formation of global production networks in East Asia cannot be well understood without knowledge of the relations between enterprises in Japan as well as their policy to promote SMEs.

As widely known, the Japanese model of industrial growth and development includes administrative and technological flexibility, lean production, labour relations based on hierarchies and cooperation, the subcontracting of goods and services from SMEs in corporate groups (*keiretsu*), and a coordination of the decisions of economic actors from the State and the market (Johnson 1982).[14] Japanese clusters (*keiretsu*) encompassed enterprises from a wide spectrum of goods and services, including banks, product suppliers, and service suppliers. Traditionally, in these clusters the large Japanese enterprises established long term relations with their suppliers, mostly formed by SMEs (Clark 1979).[15]

Although it is not the purpose, nor is there space in this short document to give an introduction to Japanese industrialization modes, it is important to highlight the historical

---

[12] The so-called third Italy includes Umbria, Marche, Emilia-Romagna, Friuli-Venezia-Giulia, Veneto, Trentino-Alto Adige, and Tuscany.

[13]Subcontracting (*shitauke*) in the Japanese economy meant a source of efficiency and competitiveness in industries like textiles, machinery in general, and automobiles, parts and components, from the early decades of the 20th century to the mid 1980s, when Japan faced exchange rate problems due to the appreciation of its currency. Later, at the end of the same decade, the era of Japanese economic expansion ended. In subcontracting, the contracting company commissions the work directly from a subcontractor, through a plan that defines the required quality, technical specifications, design, among others. Long-term relations between SMEs and large Japanese enterprises, with technological assistance to SMEs, in what was known as the Japanese dualistic structure, were mutually advantageous for both groups of enterprises. This system was behind the Japanese exporting success between 1955 and 1973, when Japanese labour costs, the adoption of a floating exchange rate, and the negative effects of the oil crisis reinforced the plans of Japanese enterprises to invest more in Asian neighbouring countries (Kimura 2001; Kitagawa 2007).

[14]The *Kanban* system, originally developed by Toyota in the 1950s, originated from a concept that tried to maintain a minimum inventory.

[15]Johnson (1982: 12-15) argues about the use of several levels as a mechanism to buffer the crises in large enterprises.

and long-term components that explain the international competitiveness and success of some SMEs in the new structure of global production and trade.

Japan has the highest proportion of SMEs among industrialized countries, organized into industrial *clusters*, for which the government created sophisticated public policies, research institutes, and specialized bureaucracies (Yamawaki 2001).[16] SMEs are the backbone of the Japanese services sector, and are a fundamental part of the manufacturing and export chain.[17] In the last few years, Japanese SMEs have been hard hit, first by the recession of 2008-2009, and then by the terrible earthquake followed by the tsunami in 2011. The government extended emergency credit lines and is trying to create the conditions to increase the internationalization of enterprises.[18]

Japanese production networks are regional subcontracting networks in which the industrial value chain is embedded geographically in a cluster of related manufacturing processes. The Ohta cluster in Tokyo is an example of a complex regional network, with more than 700 SMEs working for Japanese enterprises that manufacture original equipment (OEM) (Nakano 2004). A large part of the small enterprises that supply the Japanese networks act in niches characterized by the refined technological knowledge and manual skills of the workers. For example, in Tokyo, the Ota district is known as the city of mastery (*monozukuri no machi*) since it houses small enterprises of excellence.[19]

In the 1960s, Japanese automotive companies started joint ventures with enterprises located in neighbouring countries in Eastern Asia, to bypass the barriers imposed by import substitution policies. *Joint-ventures* allowed the establishment of local enterprises to manufacture parts and components. At the same time, Japanese enterprises started subcontracting electronic components, through labour intensive processes. To take advantage of a cheap labour force, Japanese electric appliance companies established production headquarters in Taiwan and South Korea, starting economic interactions between companies in Japan and in Eastern Asia, known as the *flying geese*. This strategy not only increased the competitiveness of Japanese enterprises, but also contributed to a *de facto* integration of East and Southeast Asian countries.

The model served as a way to cluster regional integration, but its innovative capacity dwindled at the end of last century, when Japan's leadership in semiconductors and consumption electronics was overcome by US companies (Ernst 2006). The amazing performance of the economies of Korea, Singapore, Taiwan, and Hong-Kong (provinces of China) introduced significant changes in the regional production networks and in the role of Japan's enterprises.[20]

---

[16] The proportion of SMEs in all of Japan's establishments remains relatively stable, from a maximum of 99.7% in 1957 to a minimum of 98.8% in 1996. In the manufacturing industry, the proportion remained constant around 99.4% (Kaway and Urata 2001: 1-2).

[17] Japan has one of the most detailed statistics about SMEs. The SME Agency of the Ministry of Economy, Trade and Industry (METI), the former MITI, was created in 1948 to promote the sector and publishes annually the White Book of SMEs.

[18] In 2002, direct exports were more than 4% of Japanese SMEs sales, but the proportion increased to 7.4% in 2008, before the Big Recession (White Book). In 2005, the proportion of operations abroad, over the total production of all enterprises was a little less than 30% (Kitagawa 2007).

[19] Some examples are the heat treatment plant of Kamijima with 45 employees, specialized in precision components with artisanship techniques; and Aqua Science in Yokohama, with 22 employees, which developed an industrial cleaning instrument used during the process of semiconductor manufacturing (Economist Intelligence Unit 2010).

[20] The appreciation of the yen accelerated the transfer of the production base from Japan to the group of countries in East and Southeast Asia, which besides exporting the final products, became a supplier or parts for

During the same period, the U.S. government created fiscal incentives for "shared production" operations, which drove subcontracting activities of U.S. enterprises in Asia, Latin America and the Caribbean, Canada, and Europe (Grunwald and Flamm1985). Initially it was limited to less elaborate activities, in labour intensive products like clothing, shoes and some electronics, and by the end of the 20th century, disintegrated production had encompassed a wide variety of industries, including sectors with more technological complexity.[21] Since the 1990s the fragmentation of the production of goods and services, and their distribution among a large number of countries replaced local and national areas of interaction throughout the productive chain, with a new geographical system of production and distribution, known as global supplier chains, which are part of the global value chains.

The constant growth of East Asian countries for more than two decades was associated to the creation of regional/international production and distribution networks, which in turn were formed by vertical production chains extended to several countries in the region, as well as distribution chains throughout the world. The main characteristics of East Asian production networks are the integration of production within each country in the region, the participation of many countries with different levels of income, and the inclusion of intra-firm relations and of relations through the market. In each country, sophisticated relations developed throughout the years between multinationals and local enterprises (UNCTAD 2010a; UNIDO 2004). Production and distribution networks in East and South East Asia are firmly established as a global manufacturing base of electronics, particularly the manufacture and assembly of components, generating a dynamic intra-regional trade equal to around 55 percent of the total exports of participating countries (WTO 2011).

Ando and Kimura (2005) indicated that development policies adopted by East and South East Asian countries and China since the mid 1980s and the beginning of the 1990s are crucial to understand why worldwide production and distribution networks emerged in those countries and not in other developing countries, like Latin America and the Caribbean. Although both regions followed a double path model, combining import substitution policies with the promotion of exports, associated to a significant share of foreign capital, there were some significant differences. The first one is the importance of foreign SMEs in the formation of industrial *clusters* in Asian countries. These countries introduced ways to facilitate the foreign investment process to favour the entry of smaller enterprises as investors. The second one is that the focus of development policies of local enterprises moved from the beginning of the industry, to give more support later on to the capacity of enterprises with national capital to penetrate vertical production chains. That is, on the one hand, the government of these countries didn't stop promoting enterprises with national capital, but the incentives were oriented to the international competitiveness of the enterprises.

These issues have not been sufficiently researched in the recent industrial development literature, but a better knowledge of successful policies in Asian countries could teach policymakers of Latin America and the Caribbean.

The second half of the 20th century was marked by the internationalization of the activities of companies, through direct investments or other forms of control. First, the

---

markets in industrialized countries. The process started with the appliance industry and expanded to the semiconductor sector. The transfer of products with low added value and of parts with several uses drove a large number of SMEs to invest in Asia (Kitagawa 2007: 371).

[21] See Ventura-Dias and Durán Lima 2001; Ventura-Dias2003, 2011, SELA 2011 and the references mentioned.

internationalization of U.S. enterprises, followed by the internationalization of European enterprises associated to the creation of the European Union; then, that of the Japanese enterprises, and finally the enterprises of middle-income countries in Asia, Latin America and the Caribbean. Gradually, global integration acquired its own forms of organization.

Large enterprises understood that they had to define strategies to combine continuous improvements in costs, quality, design, and services for existing types of products and processes, while developing the capacity to respond quickly to the new alternative technologies and the abrupt changes in demand for a whole new class of goods. These changes require flexible and specialized (disintegrated) organizations, willing to have cooperative arrangements between enterprises, as well as exchanges within the market.

Throughout the historical transitions, there were two main ways to create disintegrated production. First, vertically integrated enterprises focused on their central competences, eliminating parts of the conglomerates that didn't belong to them, and orienting non-pertinent manufacturing and services activities to specialized suppliers. Second, the industrial districts and clusters in world markets became increasingly competitive, formed by specialized and innovative SMEs.

Recent technological innovations reduced transaction costs, (interactions) for the international operation of enterprises, among them the costs to remotely coordinate the activities of several enterprises. This cost reduction in international operations played an essential role in the global integration movement over the last 25 years, together with the expansion of the market and the level of income, on the side of demand. When transportation and communication costs are high, economic activities tend to be local and small scale. When communication is virtually instantaneous, like today with the Internet, and transportation costs are very low, with no changes in the other factors, economic activities can be located anywhere, and adapt to the individual needs of consumers. Between these two cases we find the conditions that are advantageous for large enterprises (Lamoreaux, Raff and Temin 2002).[22]

Thus, the purchase of goods and services from independent enterprises is once again an effective alternative for large enterprises, as well as the most cost-effective (Langlois 2002). The de-verticalization expanded the economies of scale derived from mass production, by recreating economies of scale in industry, rather than internalizing them within the enterprises. As a result, the Marshallian external economics created once again efficient enterprises of different sizes, although in the context of the global economy, the logic behind the dynamic of competition and cooperation between enterprises is different from that in local production systems. In global value chains, the emphasis is on formal and extra-territorial cooperation relations between enterprises, sometimes under the authority of the leading enterprise.
The concept of global value chain is complementary to that of global supplier networks, and includes complex and systemic relations and inter-relations between different sized enterprises in activities ranging from product conception to its delivery to the final consumer. Besides the different stages of production it also includes post-sales services, waste disposal, or recycling. In sum, value chains are complex entities where manufacturing represents only one of its nodes.[23]

---

[22] See Langlois, 2002; Langlois and Robertson 1989.

[23] It is important to mention that the economic logic that explains the mechanics of international production and distribution networks isn't ruled only by the theory of comparative advantages. Although the technological gap and the difference between the prices of factors are still valid to interpret the localization patterns of industries *grosso modo*, other explanation models must be included, based on the fragmentation of production, Paul Krugman's cluster theory, and John Dunning's theory of internalization of functions.

The experiences of the last three decades show that clustering of SMEs associated to networking contributes to increase competitiveness and facilitate the internalization of their operations (Humphrey and Schmitz 1995). On the other hand, the literature highlights regional and local aspects as the most effective to affect the behaviour of SMEs, favouring cooperation and innovation. However, in the present context of a frantic search for cost reductions throughout the productive and value chain, the entry of SMEs into those chains will be subject to their capacity to absorb technological innovations, and to introduce innovative products, processes, and logistics. Besides the traditional European cases, new clusters expanded in several countries: Silicon Valley in California; Bangalore in India; the Aerospace *cluster* of São José dos Campos, in Brazil; the technological cluster of Sonora in Mexico, and many others (Herrigel and Zeitlin 2010).

This brief description of the transformation of enterprises throughout changes in technology, demand, and local and international competition reveals the historical complexity and contingency of relations between different sized enterprises. To use Chandler's categories, the strategies and structures that were effective at some time, are not so in another. SMEs were doomed to disappear in the system of mass production and homogeneous products. Within the framework of disintegrated and flexible production, new spaces were created, spaces that nevertheless require technological and organizational innovations, as is suggested in the next section.

III. INTERNATIONAL EXPERIENCES OF SMES IN GLOBAL VALUE CHAINS

The participation of SMEs in industrial activities and in international trade varies according to the country or region, but the trend is for these enterprises, particularly the smallest, to target their production to the local market. Conversely, the degree of concentration of production and exports in large enterprises varies between countries, although the larger enterprises tend to be more integrated into global production chains. The experience in Europe, Japan and other Asia-Pacific countries show that SMEs can participate in exports indirectly, as suppliers of goods and services for large exporting companies, from their local productive complexes.

For example, in 2005, SMEs were responsible for about 31% of the total exported by European Union countries, but only 13% of exports from the United States (USITC 2010a).[24] In Japan, SMEs are responsible for 53% of the added value, and about 35% of exports, mainly as suppliers for the large exporting countries of the country (Economist Intelligence Unit 2010: 7). Similarly, in several Asia-Pacific countries like Korea, China, Taiwan (China), the exports of companies with less than 100 employees represent more than 40% of the total exported by each country (ADB 2009). As in the Japanese case, most Asian manufacturing SMEs don't export directly, but operate as suppliers of goods for large enterprises.[25]

In Latin America and the Caribbean, production and exports are localized in large enterprises, but there is no statistical information about the participation of SMEs as suppliers of the large exporting enterprises. For example in Mexico, SMEs represent less than 10% of the nation's total exports, while 300 large domestic and foreign enterprises, as

---

[24] In 2007, the average size of Italian companies was four employees, Germany (13.3), the United Kingdom (11.1), France (5.8) and Spain (5.3). In 2009, 95% of more than 4.5 million active companies had less than 10 employees and absorbed 47% of total employment in Italy. There were 3,718 companies with more than 250 employees, close to one-third of the manufacturing sector. In the last 3 or 4 decades, the structure has remained similar (Amatori, Bugamelli and Colli 2011: 19).

[25] These data must be analyzed carefully, because indirect participation is estimated through input-output statistics. Very few countries have input-output statistics separated by company size.

well as around 3,500 *maquilas* exported more than the remaining 90% (De la Mora 2010: 118). In Chile, in 2002, the exports of around 25 large enterprises represented almost half of the national total (Mussa and Carvalho 2007: 226). Also in the case of Brazil, 2007 data reveal that approximately 92% of its exports corresponded to foreign sales of large enterprises, 6% to the export of mid-sized enterprises, and only 2% to the sales of micro and small enterprises (UNCTAD 2010a: 28).

We mustn't forget that most Latin American SMEs are characterized by a high technological and organizational heterogeneity, which Aníbal Pinto labelled as *structural heterogeneity* (Pinto 1970). In the region, asymmetries between large and small enterprises don't refer only to the scale of production, but to the large technological and organizational lags which cause high productivity differences between SMEs and large enterprises. The creation of the "missing middle", in terms of innovative and efficient SMEs, is essential for the region to move forward in terms of local and regional productive integration.

In the last decade, the region's governments used and continue to use several political instruments, with more or less success, to improve the productivity of SMEs and expand their international operations (Ferraro ed. 2010; Ferraro and Stumpo 2010). With the changes in the nature of trade and the international organization of production, international cooperation efforts are geared towards fostering a greater participation of Latin American and Caribbean SMEs in global supplier chains. However, according to data from the IDB, Brazil only spends the equivalent of 0.085% of GDP (less than 1%) to support SMEs. The average for Latin America doesn't reach 0.02 %, while in Chile and the Dominican Republic, it is over 0.03% (Angelelli, Moudry and Llisterri 2006: table 5, pg. 17).

As has been said, international experiences show that one of the determining factors for the successful participation of SMEs in the international economy is their effectiveness in relating with large industrial or commercial enterprises, through subcontracting or through the market (UNCTAD 2010a). On the other hand, the cluster economics of industrial clusters promote the collective efficiency of smaller enterprises. Cooperation relations between local SMEs will allow them to take advantage, and learn from the cluster economies, creating an environment that is conducive to innovation. The literature of production organization stresses the social capital of the different sized enterprises in articulated networks, as the factor that determines the climate of trust between companies, reduces transaction costs, and facilitates cooperation relations.

When small enterprises are part of dynamic *clusters*, both in developing and in industrialized countries, they are better prepared to overcome some of the greatest restrictions, such as the lack of specialized skills, and the difficulties to access technology, inputs, market information, credits, and foreign services. However, they need the help of public and private organizations for credit, training, and other services.

Before analyzing the successful experiences of enterprises in value chains, it is important to introduce the literature on local productive clusters, as an essential stage to insert SMEs into the most dynamic global trade flows.

1. Industrial districts and industrial *clusters*

The starting point of an industrial *cluster* is Marshall's original definition, a geographically localized productive system, based on a broad division of labour between specialized SMEs into stages, tasks, or different and complementary activities in a common industrial sector. There could be variations, for example by

the size of productive units, the extent of the links between enterprises, and the degree of relations between enterprises and their localities (Zeitlin 2008: 223).[26]

In an article of 1979, the concept of Marshallian industrial districts was rediscovered by Giacomo Becattini, who used it to interpret the industrial growth of central and north-east Italy (Sforzi 2008).[27] A vast literature was written in Italy stemming from this article, covering the regional forms of industrial development, characterized by the local entrepreneurial spirit, and the proliferation of specialized SMEs who were producing for markets outside the region. Starting in the 1990s, Michael Porter spread the notion of industrial clusters or productive complexes. For Michael Porter, *clusters* refer to the union of companies that compete amongst themselves, but also have cooperation relations allowing the socialization of some external factors. For both, the industrial districts and the industrial clusters, the region is the unit of analysis. The organizational structure of industrial *clusters* is based on subcontracting in vertically disintegrated production chains. Cluster economies reduce individual costs because clustering increases the negotiation power of each enterprise with suppliers, and favours innovation since the constant interaction between specialized enterprises leads to trust, limits transition costs, and allows a tacit knowledge transfer.[28] According to the institutional literature, the transaction costs (interaction) inherent in relations between enterprises are reduced when they are based on trust, and social rules prevent opportunistic or disloyal behaviours.[29]

The best known experience of a successful international insertion of SMEs through industrial *clusters* is that of the industrial districts of Italy, which between the end of the 1960s and the mid-1980s, revealed a collective capacity for innovation, adaptation and reconversion.

However, the Italian authors differentiate between industrial districts and industrial *clusters* (Becattini 2004; Bellandi 2007. Compared to *clusters*, industrial districts are local production systems, which are integrated to the global market. Industrial *clusters* are enterprises that operate locally, but don't necessarily have strong local social links. That is, not all industrial clusters are industrial districts. However, *clusters* are more generic forms of local or regional production systems. (Zeitlin 2008: 222).[30]

In an ideal model, the dynamics of industrial districts is guided by cooperation on the one hand, and on the other, by competition based on innovation. Innovations come from

---

[26] The main industry includes a blend of horizontal (competitive), vertical (input-output) and diagonal (related instruments and services) specialized activities.

[27]Sforzi (2008: 327) says that the collection of articles made by Giacomo Becattini (1987) *Mercato e forzelodali: IL distretto industriale* popularized the concept of industrial district in Italy. Becattini investigated the economic development of Tuscany in Italy, since the 1960s.

[28]Storper (1997), Porter (1998), and Courlet (2005) adopted a wide definition of industrial clusters that incorporates wool textiles from Prato, metal-mechanics from the Arve Valley (France), technological districts like Silicon Valley in the United States, or the middle complex of Cologne, Germany; trade service districts like Lille-Roubaix-Tourcoing; financial districts like London, and logistic districts like Duisburg or Venlo, on the border between Holland, Germany and Belgium (in Zeitlin 2008: 222-223).

[29] See North 1990, 2005; Bardhan 2005.

[30] The contribution of multidisciplinary studies on industrial districts must be noted, in the re-introduction of history and geography, and of time and space in the industrialization processes and the relations between enterprises. Historical research revealed the importance of local roots for the collective efficiency of SMEs in industrial districts. Therefore, the studies disseminated the differences in the industrialization process between countries, outlining organic process that was more complex than those mentioned by classical and neo-classical studies (Becattini, Bellandi and De Propris 2010).

tacit or non-codified knowledge, are incremental, and are based on learning by doing. Cooperation between enterprises allows using the economies of scale in purchases, sales, investment in infrastructure, relations with the public sector, and the dissemination of information on technology and markets, among others. In industrial districts, some dissemination of innovations occurs through "informal socialization", which results from the interaction between local actors. In fact, trust between local actors is an important component of the informal institutional capital, or the social capital of industrial districts. Social capital is added to the financial and human capital of each enterprise in the industrial district.

Several authors criticized the idealization of industrial districts, because since they were restricted to the peculiarities of the Italian experience, they lost their capacity to accommodate a variety of forms empirically observed in other localities (Herriger and Zeitlin 2010).[31] Empirical results show that large enterprises were just as important as other local institutions in disseminating technology and knowledge within industrial clusters.[32] Likewise, the companies in the districts were heterogeneous, and their functions were not exchangeable in terms of roles and tasks. Also, relations between enterprises were not homogeneous, and some enterprises had the capacity to create and administrate large networks, separated from their relations with other enterprises (Boari 2001: 4).

The literature on industrial districts doesn't analyze the economic factors that affect the relations between enterprises, and the incentives for cooperation between the participating enterprises. The literature indicates a serious problem in the study of industrial clusters, namely that they concentrate excessively on local sources of competitiveness and collective efficiency, derived from the relations within the clusters. Nevertheless, studies in general overlook the external links between *clusters* and global value chains (Pietrobelli and Rabellotti 2007).

For the experience of industrial districts to be replicated in other places, it is necessary to identify the institutional mechanisms to manage and solve the conflict of interests between local actors, when these occur. Zeitlin (2008: 226) mentions a study conducted in Birmingham suggesting that trust and cooperation between industrial districts depend on the conscious efforts of institutions such as trade associations, and the incentives they offer. Studies must focus on the governance mechanisms that provide a solution to the collective action issues in *clusters*, that is, the institutions that hinder or control the opportunistic behaviour of the enterprises that try to obtain individual advantages at the expense of others.

The issue is how to recreate a dynamic and trusting environment between the enterprises of industrial districts in other regions so as to increase the collective efficiency of other SMEs. Carnevali (2004, quoted by Zeitlin (2008: 226) proposes that to be an effective framework for flexible production, industrial districts must develop a set of coordination and governance mechanisms to control opportunistic behaviours without reducing the flow of informal mechanisms that foster cooperation between decentralized economic actors. Among them, dispute resolution mechanisms, and institutions to provide SMEs with

[31] Some industrial districts didn't realize the changes occurring in the industry and lost competitiveness due to tradition: the regional network of Swiss watchmakers in the 80's; the clothing industry in New York; cognitive, institutional, and political issues affecting the decay of network relations between steel enterprises in Germany, among others (mentioned in Nakano 2004: 5).

[32] For example, large Florentine and English buyers played an important role in the interest of the districts of Tuscany in foreign markets and in defining the taste of consumers at the end of the 19th and beginning of the 20th century (Becattini 2003).

collective services that they cannot have individually, like training, research, market information, credit, and quality control. Some studies mention the role of trade associations, trade unions, purchase and sales consortiums, and technology centres to solve market lacks of information and training.[33]

For the more skeptical, the organizational structure (industrial district) doesn't guarantee a good export performance, since not all industrial districts are innovative, flexible, cooperative or successful in their international insertion strategies. The same structural characteristics may be found in districts that are stalled or on their way down. History is full of examples of *clusters* that didn't know how or couldn't maintain their competitive advantages for a long period of time, and adjust to the changes in external variables.[34] Since the emphasis has been on local structures, and because there is a lack of accessible data, the integration mechanisms of industrial *clusters* with complex networks have not been investigated as deeply as the relations within the districts.

Since 1990, the international fragmentation of production introduced new challenges to the industrial districts of Italy, and to the other industrial *clusters*. The problems faced by the industrial districts and the Italian economy led some experts to conclude that the predominance of SMEs in the Italian industrial structure is an obstacle for their insertion in the dynamic global trade networks (Amatori, Bugamelli and Colli 2011).

The decline of the textile industry in the region of Prato, Tuscany, is an example. An industry that originated in the 12th century, the experience of Prato showed that industrial districts by themselves, despite having flexible and innovative methods, don't guarantee sustainable success in a context of financial opening, the appreciation of the Euro, competition of producers in developing countries, and the stronger role of distribution networks and well-known brands. Between 1970 and the end of the 1990s, the textile industry of Prato made great strategic changes and complex readjustments to changes in the external conditions. During this period, enterprises in Prato created new combinations of fabrics and weaves for the fashion industry, and established an innovative pattern. However, more recently, the entry of other nationalities in the district is affecting the more essential components of the operation of an industrial district.[35]

In fact, the organic principles of industrial districts seemed incompatible with the need to subcontract and relocate productive functions, imposed by global value chains.[36] However, there are evidences in Italy, Spain, and Portugal of a gradual move of some

---

[33] For Boari (2001: 15-16), the creation of high level technical schools in the 1930s that were directly linked to the needs of local industries has been the most important factor in the development of SMEs in Italy, specifically the industrial district in Bologna.

[34] Some examples are the steel *cluster* in Youngstown-Pittsburgh; textiles in New England, in Kalamazoo, Michigan, for which the University of Western Michigan created a Paper Engineering Department, and still could not remain competitive ("Thoughts on Industrial Clusters" available at http://www.upjohn.org/node/504).

[35] Since 1990, Chinese entrepreneurs and workers started immigrating to Prato, to establish small enterprises that were ethnically separated from the others. Later, these Chinese SMEs purchased subcontractors to dye and process clothes, enterprises that produced clothing accessories, or companies that provided services like consulting, trade, personal services, etc., and worked separately from the other local enterprises. In 2011, there were around 25,000 foreigners from China. There were 3,177 Chinese-owned companies, almost half of all textile and clothing companies in Prato (7,582) (Unione Industriale Pratese, 2011, "Evolution of the Prato Textile District", available at http://www.ui.prato.it/unionedigitale/v2/english/presentazione%20distretto%20inglese.pdf).

[36] Becattini, Bellandi and De Propris (2010: 9) suggest that in the economics of knowledge and globalization, more important than *know-how* is *know-where*. Knowing which functions must be located in which region became one of the reasons of the competitiveness of organizations with globalized production, whether multinationals or industrial districts. This doesn't refer only to cost reduction strategies, but also sources of knowledge and market positioning.

functions of industrial districts outside their region; several enterprises decided to establish international *joint-ventures* or foreign investments to achieve more efficiency individually, new knowledge, or approach new markets. We still have to see if, as in Prato, the survival of the districts will occur due to drastic changes in their organizational structure.

In the last few decades, industrial *clusters* became complex systems that produce parts, components, and modules for a large variety of final products. As local suppliers, SMEs, under the control of purchasing companies, are located at different levels in subcontracting networks, which eventually end up in the nodes occupied by original equipment manufacturers (OEM) for assembly.

The most successful examples have combined a close and more formal cooperation between the economic actors in the districts, with new production arrangements and the transfer of knowledge and capacities from multiple geographic origins. Some characteristics were summarized by Zeitlin (2008: 232): 1. Differentiate distribution by the size of the enterprises within the districts, whether because of the appearance of large leader companies, or the creation of formal or informal groups of enterprises (including the ownership of shares of key supplier companies); 2. Increase the purchase of products and materials outside the district, including direct foreign investment in companies in other regions and countries, and 3. Increase direct foreign investment by foreign multinationals in the districts, which usually purchase local key enterprises. Thus, districts are increasingly becoming part of international supplier chains, and the knowledge exchange networks. However, one of the negative results has been the weakening, and even the rupture of informal mechanisms and social norms to contain opportunistic behaviours in industrial *clusters*.[37]

On the other hand, knowledge about industrial *clusters* increased with the emergence of new *clusters*, in middle-income developing countries. The most outstanding cases are China, India, Mexico, Brazil, Chile, Colombia and South Africa, among others.[38] In these cases, the development of industrial clusters of SMEs was articulated to the promotion of relations between SMEs and large national and multinational enterprises (UNCTAD 2010a). The aero-space *cluster* of São José dos Campos, São Paulo, Brazil, is an example of a productive complex with sophisticated technology around the airplane producing enterprise EMBRAER, of ITA (Instituto Tecnológico de Aeronáutica – Technological Institute of Aeronautics) and INPE (Instituto Nacional de Investigaciones Espaciales – National Space Research Institute).[39]

Some *clusters* in Latin America and the Caribbean were thoroughly studied. Several industrial clusters were spontaneously established during the period of import substitution, emphasizing the importance of time in the creation of *clusters* (Pietrobelli and Robellotti 2006). For example, shoe production complexes in the Valle De Sinos (Rio Grande do Sul, Brazil) which started in 1960, and in Franca (São Paulo, Brazil), where almost all segments of the productive chain are close to the final product cluster; the furniture *cluster* in São

---

[37] See Ottati 2000, for an interesting application of the analytical framework suggested by Albert Hirschman (Exit Voice, and Loyalty) concerning the case of the Prato district in Italy.

[38]The development of the information technology industry in India started with industrial *clusters* of SMEs in different areas: Bangalore, Hyderabad, Chennai, Pune, among others. Bangalore has close to 1,500 enterprises that employ more than 100,000 people. A large number of information technology multinationals (Intel, Cisco, IMB, HP) established subcontracting centres in Bangalore. Bangalore also houses the Science Institute of India, the Institute of Information Technology of India, and the Institute of Administration of India, as well as a broad network of regional schools of engineering, state government research centres.

[39]*Brazilian Aerospace Cluster* (http://www.aerospacecluster-brasil.com.br/english/default.aspx).

Bento do Sul (Rio Grande do Sul, Brazil), which consolidated in the beginning of the 1970s, among many others.[40] Also, the shoe clusters of León and Guadalajara in Mexico (Nadvi1995); and the wine and salmon clusters in Chile (Giuliani and Bell 2008). Other agro-industrial, mining, and forestry clusters have emerged in Mexico, Central America and South America. However, the lack of specific measures to preserve the accumulated social capital during the process of commercial and financial opening of the 1990s led to a loss of the productive links that were created.[41]

A recent ECLAC document concluded that in their policies towards SMEs, and in different ways, Latin American and Caribbean governments are trying to create collective advantages, generate external or cluster economies, and implement group actions for mutual benefits. Although not all productive groupings in different countries in the region adopted the concept of *clusters*, governments have tried to overcome, through different "initiatives" the conventional proposal of individual actions (firm to firm), to face the participation initiatives and their multiple impacts, both for firms, as well as institutionally…" (Ferraro and Gatto 2010: 18).

The present environment of exacerbated international competition is completely different from the one that enabled the emergence of the Italian SMEs into competitive industrial districts more than four decades ago. There is empirical evidence that in several industries, changes in the international organization of production created opportunities for the more innovative SMEs, but also helped stall the modernization process and functional improvement of others (Altenburg 2008; Berger, Humphrey and Schmitz 2000, 2001; Sturgeon et alia 1999). The following section reviews some of the literature on global value chains, emphasizing the issues posed by their governance, and the diversity of experiences in the insertion of enterprises from developing countries, particularly Latin America and the Caribbean.

2. Global value chains

The terms value chain, production chain, or suppliers' chain are analytical concepts used to study the main processes and the set of activities involved in the creation, production, and delivery of a product or service to the final consumer, as well as other processes such as the post-sell services and the disposal/recycling of the product, after its consumption.[42] The terms are not very accurate, and were created in the pragmatic context of business management. Value chains are heuristic instruments that indicate the companies they have to see all the activities in order to assess their relative competitiveness. Leading companies include the value chain in their strategies to decide how much, when,

---

[40]See "Pesquisa de Mercado Interno para o APL Madeira e Móveis do Alto Vale do Rio Negro" in the WEB page of the Ministry of Development, Industry and Trade of Brazil (http://www.desenvolvimento.gov.br/arquivos/dwnl_1199884282.pdf). "Vale do Sinos. Da produção calçadista ao high-tech" *Revista do Instituto Humanitas* Unisinos, available at http://projeto.unisinos.br/ihu/uploads/publicacoes/edicoes/1276604834.6737pdf.pdf).
For references, see Nadvi 1995; Noronha and Turchi 2002; Pietrobelli and Rabelloti 2004; 2006.

[41] For more references, see the long list of publications by ECLAC (Economic Commission for Latin America and the Caribbean) in the Programme "Clusters around Natural Resources", (available at http://www.eclac.cl/cgi-bin/getprod.asp?xml=/ddpe/noticias/paginas/3/15063/P15063.xml&xsl=/ddpe/tpl/p18f.xsl&base=/ddpe/tpl/top-bottomudit.xsl).

[42]The concept of value chain was developed and made popular in 1985 by Michael Porter, in his book Competitive Advantage, as an instrument to strengthen the competitive advantages of the companies. At the same time, the idea of a chain of suppliers saw the light in the 1980s, to manage the total flow of goods and services, from the suppliers to the final consumers.

and how to produce in their facilities, or to buy from external suppliers. The objective is to reduce costs and increase profit, transfer part of the costs to their suppliers, take advantage of labour price differentials between countries through subcontracting operations, and, whenever possible, eliminate the middle man to concentrate the value generated along the chain on the company.[43] As mentioned in section 2, the activities comprising a value chain can be included in a single company, or be divided between different independent companies. Similarly, the activities can be confined to a single geographic location, be distributed between several regions in the same country, or between several regions in different countries.

The concept of global value chain is complemented with that of global production networks of independent companies. The production network reflects the accelerated fragmentation process in intensive activities known in some value chains. In them, technological knowledge may adopt the characteristics of a commodity, benefiting the separation of design and of other intensive process by the manufacturing system of the value chain; and by the same token, are distributed throughout different geographic locations (UNIDO 2004: 6). Also, the global networks of suppliers consist of the leading companies and the local suppliers. The leading company is the one defining the strategy and the organization policy of the network. A global production network led by a company can participate in different value chains, while a value chain can incorporate two or more production networks (UNIDO 2004: 6-7).

Studies carried out by UNCTAD have concluded that, in the last decades, several multinational companies have changed roles. They are no longer global producers, but global buyers and coordinators of global networks owning intangible assets such as brands (UNCTAD 2010b: 3).

From an analytical point of view, the proposal of value chains changed the analysis unit from the plant to the set of activities intervening from the conception to the final consumption (and beyond), allowing looking at the activities of conception, production, and commercialization in a comprehensive manner. Traditionally, analysis used to focus on the physical production of the industrial plant; information flows, goods and services, on the different phases of manufacturing are included in the concept. However, as suggested by several authors, the approach of value chains still has not constituted a coherent theory. Literature is multidisciplinary, including business managing sciences, innovation theory, transactions costs theory, industrial economy, and international trade, logistics, economic geography, sociology, regional economy, and development economy.[44]

As a result, the analysis made using value chains can help policy makers to better understand the dynamics of the generation of value, as well as the nature of the determining factors of the productive and technological capabilities of each country. It is worth mentioning that once the goods (physical entities) are conceived as a set of activities or tasks that create value, the emphasis on industrial development may not be on production or manufacturing *per se*. In other words, value chain innovation involves

[43] For instance, for Hobbs et alia (2000), a value chain is different from a production or suppliers chain in that the participants in a chain of value recognize their interdependence and share a long-term strategic goal. The value chain would be a specific form of chain of suppliers.

[44] Altenburg (2008) refers to the different definitions of the concept of value chain, which depend on the disciplinary framework and of the purpose of use.

capabilities both inside and outside industrial production, such as the skills in design and marketing, knowledge to diversify markets and to introduce new products. Thus, the analysis of activities along the value chain can help decision makers to generate industrial development policies that are more effective, putting distance from physical production and from its manufacturing component.

The absence of systematic quantitative data that can be compared in the study of value chains keeps the conclusions of the literature in the realm of industry, and in some cases, in the realm of the company. Case studies performed to more accurately identify the technology transfer mechanisms, the organizational structure, and the concrete actors, as well as the knots integrating them to the global economy, allowed for an extensive description of the set of activities throughout the value chain of different industries. Literature has managed to clarify different aspects of the emerging contexts of the value chains in a great group of companies, with an emphasis on the political economy of the relations between the companies. In each value chain, the characteristics of learning, innovation, and knowledge transfer are specific to the industries studied, but have a relation with the governance of the relations between companies. The governance of a value chain includes the power to control, influence, and define the interaction modes and rules between companies (Altenburg 2008).

The governance structures or the coordination in global value chains vary from one industry to another. The classification known proposed by Gereffi (1999) includes two main groups: the chains that are controlled by the buyer (*buyer-driven*), and those that are coordinated or controlled by the producer (*producer-driven*). Chains controlled by producers mainly include capital and technology intensive industries, such as automobiles, aircrafts, computers, semiconductors, and heavy machinery. Also, chains coordinated by buyers include the ones established by companies that own massive consumption brands, by major distributors and retail networks that control subcontracting operations. This type of chain can be found in consumer goods industries that have intensive labour in clothing, shoes, household appliances, and consumer electronics, among others. As it is widely known, Mexico and other Central American and Caribbean countries participate in subcontracting activities, mainly in global chains for the production of textile products and electronics.

Some experiences show that cluster and dynamic networks have a tendency to be "driven by the buyer", and that public support to improve SMEs has a stronger impact on chains "driven by the buyer" than on those "driven by the producer" (Humphrey y Schmitz 1995).

The concept of governance was used by Humphrey and Schmitz (2001) to refer to the institutional mechanisms and to the relations between companies outside the market, through which the coordination of the activities in the chain takes place. This coordination is achieved through the definition and execution of parameters of products and processes that have to be followed by the actors in the chain. Governance affects the conditions of access to the market, since without the capabilities to fully comply with the required parameters the companies in developing countries cannot have access to the leading companies in the chains. At the same time, the governance of a chain is key to understand the distribution of risks and benefits throughout the chain.

The governance of value chains thus includes the coordination that allows transactions and the flow of knowledge in the chain, and the nature and quality of the relations the companies have among themselves, with the service providers and with regulatory institutions (UNIDO 2011: 49).

Gereffi, Humphrey and Sturgeon (2005) conceptualized five types of governance in the global value chains. In the two extremes are the most traditional types: 1.Relations between companies through market transactions, with low costs for both sides of exchange of partners. These transactions take place when they are easily coded, the specifications of the products are simple, and the suppliers have the capability to manufacture the products with minimum supplies from the consumers; 2. Coordination by vertical integration through hierarchic relations (bureaucratic authority), which is exercised inside the company. The most dominant form is managerial control, from the administrators to the subordinates, and from the matrixes to the subsidiaries or affiliates.

The other three types are the ones that try to include the most ambiguous relations between companies in the global value chain. First, in the modular value chains, suppliers produce the products, according to the client's specifications. This type of coordination presents itself when the architecture of the product is modular, and the technological patterns simplify interactions. Second, captive value chains enclose relations between legally independent companies, but with subordination relations between suppliers and leading companies. This type of coordination takes place when the specifications of the products are complex, but the capabilities of the suppliers are low. Leading companies in the chain set the rules that the rest of the actors shall follow. Finally, in the relation value chains or in networks, there is cooperation between companies that have more or less the same power, and that share their competences inside the chain. This is the case of industries in which the specifications of the products cannot be coded, transactions are complex, and the capabilities of the suppliers are high.

In general, in spite of the global adjective added to the value chains, there is a certain geographic stratification of the industries, defined by historic and temporary factors, as shown on the previous section. In general, in developing countries with no industrial base, natural resources and cheap labour attract big leading companies in specific global value chains, such as textiles, consumer electronics, among the manufacturers, for the "location" of intensive labour tasks, or in specific resources (agro-industrial chains, mining, et cetera). In India, multinational companies established links with local and international information technology companies; in China, Taiwan (Chinese province), Malaysia, and Singapore, among other Asian countries, the global value chains are constituted by electronic products. In Latin America, throughout the last decade, a regional value chain was generated in car parts and components (MERCOSUR), as well as in Mexico-USA-Canada, in electronic components (UNCTAD 2010b).

The advantages offered by the participation in global value chains to the SMEs of developing countries, in terms of knowledge transfer and technological progress, have to be pondered by the economic dependence, and by the power asymmetries characterizing these chains. It is important to reiterate that the advantages of the integration into a global value chain are not different from the international integration through trade or through direct foreign investment. However, 1997's financial crisis in Asia, and the Great Depression from 2008-2009 showed that the vulnerability of external shocks does not only affect countries that import basic supplies. The concentration of assembling operations in quasi-commodities manufactured products, and a high rate of these products in national exports leave the exporting country with few options to face a demand crisis. As we have seen recently, the effects of a decrease in the sales of big stores, due to demand shocks, are multiplied throughout the chain. The brutal impacts of the financial crisis on global trade, between the third quarter of 2008, and the first quarter of 2009, showed the domino effect of global value chains (SELA 2011).

It is important to bear in mind that global value chains are multidimensional, and include different layers of types of suppliers and assemblers. While in the production process in integrated plants, the process of assembling parts and pieces is linear, in global value chains each part and piece has its own production and suppliers chain distributed in different countries, creating highly complex graphics.

CHART 1
Value Chain – Uphill Path

Assembly– Contract Manufacturing) (CM)	The emphasis is on manufacturing, generally following specifications from the buyer, and using materials supplied by the buyer. The clothing sector would be described as "cut-make-trim."
Contract Design and Manufacturing (CDM)	Besides what the companies do on Contract Manufacturing, these ones participate on the design of the suppliers' chains of the buyer, helping them buy the components and other engineering logistics.
Original Equipment Manufacturing (OEM)	The supplier assumes a wider set of manufacturing tasks, possibly including the supply of inputs and logistics functions. The buyer is still responsible for the design and marketing. The clothing sector would be described as "full package" production.
Original Design Manufacturing (ODM)	Besides producing, the supplier is in charge of the designing process, possibly jointly with the buyer. In most advanced cases, the buyer simply adds its own brand or emblem to a product designed and produced by an external supplier.
Original Brand Manufacturer (OBM)	The supplier designs, produces, and markets its own products under its own brand. It does not need to rely on a buyer for such functions.

Source: Humphrey, John 2004, Chart 1, page 8.

Literature available about manufacturing value chains indentifies clear differences and hierarchies among the types of relations between supplying companies and the buying leading company. Three types are important: 1. Companies that specialize in assembling operations (CM); 2. Companies that besides assembling, help the buyer in the design of

their chain of suppliers, and assist on the purchase of parts and other engineering logistics (CDM); and 3. Companies that offer original design and manufacturing (ODM).[45]

Companies on contract production specialize in assembling, which is the less profitable phase of the chain. They get the design from a buying company (client) and instructions about the parts to be used. The CM companies focus on assembling the product in an efficient manner. CDM companies, besides what CM companies do, participate in the design of the chains of suppliers of the client, helping with the purchase of parts and other engineering logistics. OPDM companies start the designs, do the CDM, organize all aspects of the offer, logistics, etcetera. In this case, the client only puts its brand on the final product, and distributes (Greenstein 2005).[46] The most profitable layer of the chain is the manufacturing of the own brand (OBM) (see Chart 1).

In the literature, the upgrading of a company is the result of its ability to make better products, to make products more efficiently, or to move to activities that require more sophisticated skills. Thus, the upgrading of a company can be defined as the ability to innovate in order to increase the added value of its products (Pietrobelli and Rabellotti 2006).

Gereffi (1999) specifies five possible strategies for the upgrading of a company in general: 1. Upgrading of a product (better quality, better design); 2. Upgrading of process (upgrading in scale and speed, which allows the supplying company to improve the efficiency and productivity); 3. Channel the supplying company can use the accumulated experience and skill in a particular function of a chain, for instance, in the competence in the exporting marketing to diversify to a new sector, normally in local or regional markets); 4. Integration in the supplier's chain: (the company establishes links with the suppliers' chain); and 5. Functional upgrading (acquisition of new functions to increase the added value of the activities). For instance, the companies can move from the manufacturing production to the design or marketing of the product. Also, these types of improvements in the capabilities help understand the ways in which the companies and countries build their development strategies to achieve the upgrading towards such sustainable niches of more value in the global economy (see Chart 1).

The odds of supplying companies achieving functional upgrading tend to be better in value chains if the coordination is made through a network. In other words, more equal relationships between suppliers and buyers. For instance, Motta Veiga and Rios (2010) mention the case of shoe companies in Rio Grande do Sul, and of furniture manufacturers in Santa Catarina, two Brazilian states that integrated themselves into global value chains led by buying agents from the U.S. and Europe. This integration allowed them for improving the processes and products, but limited their functional upgrading.

The improvement of the position of suppliers is essential for the sustainability of the benefits of integration of the companies in global value chains. That is to say, it is not enough to be a supplier for a multinational company. Among developing countries, competition between subcontracted companies to carry out tasks based on the specifications of the buying company is impeccable. In order to advance towards phases of more added value, SMEs have to make substantial investments in long-term assets, such as specialized skills, and internal capabilities for innovation and research. It is important to reiterate that

[45] CM stands for contract manufacturing; CDM: contract design and manufacturing); and ODM: own design and manufacture. During the first phases, ODM refers to increasing changes in existing products.

[46] In 2004, Sanyo was a well-known manufacturer of original equipment (OEM) of different digital cameras marketed under different brands around the world (Nakano and White 2006: 2, note 4.

in order to achieve this objective, the relation of clusters or industrial parks, with links with local universities, is usually an effective tool, although it is not always enough.

The case of the electronics industry in Malaysia is instructive as it points out the limitations of such local strategies in the face of the conditions imposed by the strategies of leading companies in the coordination of the global value chain. Malaysia was a successful insertion story in global value chains, with a significant upgrade in job creation and in labour productivity. Electronic products reached nearly 60% of national exports, and nearly 30% of direct foreign investments in the country were made in manufacturing. Almost 40% of the electronic products that get into the U.S. comes from Malaysia. The Malaysian government in the Penang cluster, equipped with research centres, defined a series of incentives for private companies to promote innovation and the improvement of their activities. However, low-complexity assembling operations continued to dominate the insertion of Malaysia into the global value chains. Also, Malaysia did not manage to develop a sufficiently sophisticated and deep industrial structure to induce a strong private investment in specialized skills, and in innovative capabilities (Ernst 2003).

Furthermore, the absence of significant results in terms of improvement of capabilities for participating companies does not exclude the success of individual companies. In Malaysia, the company ENGTEK (Teknologi Holdings Bhd) became a global supplier of hard drives and semi-conductors. In 2007, the company had nine affiliates and 2,000 employees. It was created in 1980 as a small family business. The reasons for its success can be found in its ability to seize the opportunities offered by multinational companies. In the beginning, INTEL helped ENGTEK with technical and financial support for the production of semi-conductor components in 1981. Afterwards, with the support of Advanced Micro Devices (AMD), Bosch, Fugitsu, Hewlett Packard, Maxtor, Readrite, and Seagate, ENGTEK went from designing products to become a first level supplier (UNCTAD 2010a: 10, box 1).

In Latin America and the Caribbean, recent studies conducted by UNCTAD (United Nations Conference for Trade and Development), and IDB (Inter-American Development Bank), and the MERCOSUR Network for Economic Research, among others, found contradicting evidence on upgrading of local companies in different types of value chains (UNCTAD 2010a and 2010b; Pietrobelli and Rabellotti ed. 2006; Prochnik ed. 2010; Monge-Ariño 2011; Motta Veiga and Rios 2010; Zuñiga-Arias 2011).

In the manufacturing sector, the companies of the region are inserted in textile and clothing value chains, electronic products, and pharmaceuticals, mainly as subcontractors for buying companies. Gereffiy Memedovic (2003) described the concentration of retail trade in the U.S. and in Europe to be closely related to the increase in global sales of textiles and clothing, on the one hand, and by the intensification of competition between retailers, distributors, and manufacturing companies. Large retailers that used to be the clients of manufacturing companies became their main competitors.

Since the late 1980s, Mexico, Central American and Caribbean countries took advantage of their proximity to the U.S. to create exports' processing areas, and tax incentive programmes to attract foreign direct investment with the objective of exporting to the United States.[47]

In 2001, during the life of the quotas of the Multi-fibre Agreement, clothing exports from those countries corresponded to 28% of the market. Mexico, along with Hong Kong, South

[47] For the case of Costa Rica, see Monge-Ariño (2011).

Africa and Korea, were considered to be the main suppliers, while China and Mexico were in search of development capabilities to offer full-package type products.[48] However, two errors limited the expansion of the region: 1. Low integration of the clothing industry with the local textile industry, underdeveloped, poorly funded, and inefficient; and the competition with Central American and Caribbean companies, due to the preferential access to the U.S. market, which resulted in a low sub-regional integration (Gereffi and Memedovic 2003),

The entry of China into the WTO in 2001, and its exporting drive, drastically altered the competition conditions of the textile and clothing chain.[49] In Asia, the most competitive exporters, Hong Kong, Korea, Taiwan (province of China), and China, started to establish assembling processes in nearby countries and with lower wages, in order to go around the limitations of the quotas. In other words, unlike Mexico, Central America and the Caribbean, in Asia, local companies managed to establish a production network that was regionally integrated. China, Bangladesh, Vietnam, and Indonesia upgraded their position in the U.S. and Europe markets, at the expense of Mexico, Central America, and the Caribbean. (Frederick and Gereffi 2011).

According to Frederick and Gereffi (2011), Central American and Caribbean countries are considered countries limited to the capabilities of CM (contract manufacturing/ CMT cut, make, trim). The absence of a modern and efficient textile industry in Mexico has made it difficult for it to upgrade to supply of "full packages". Hong Kong, Korea, Taiwan, and later on, Malaysia, Singapore and Thailand managed their conversion to countries that coordinate suppliers' chains and added-value activities, such as design, and invest or subcontract manufacturing activities from other countries. Among the ten clothing-exporting countries, in spite of the effort made to diversify destination markets, Mexico (along with Tunisia) is the country that keeps its clothing imports concentrated in the U.S. Between 2000 and 2009, Mexican exports to the U.S. were reduced from 97 to 89% of the total, while Chinese exports are divided between Europe, the U.S., and Japan. Similarly, the domestic market represents an important source of diversification for textile and clothing companies for China (Frederick and Gereffi 2011: 76, 78-79).

In the clothing chains, as in other chains, the success strategy of other Asian countries has been to escape from the captive value chains, of assembling of imported supplies in exports processing areas, to locally integrated exporting forms, with more added value, with the offering of "full package" (Gereffi, Humphrey and Sturgeon (2005). The upgrading of China in the clothing value chains is explained by the integration in the country, between the textile and clothing industries, and by the continuous investments on modernization of the machines, as well as of logistics technology to facilitate the joint work between the nodes of the suppliers' chain, increase productivity, and reduced time between nodes. Labour costs are lower than Mexico's, but higher than China's neighbours. Actually, costs are kept low due to the labour's high productivity, the efficiency of local and regional productive complexes, and modern infrastructure (Frederick y Gereffi 2011).

A joint OCDE-UNCTAD study selected five economic sectors for the field research of the role of the SMEs in the global value chains. These sectors were software, automobiles

[48] According to Frederick and Gereffi (2011), there are several types of "full packages" in the clothing chain. "full packages" allow buying companies the possibility of delegating purchase and logistics coordination functions to the supplier of the "full package".

[49] Between 1995 and 2009, China's contribution to global clothing exports rose from 22 to 41% (Frederick and Gereffi 2011: 69).

(parts and components), creative industries, scientific precision instruments, and tourism. UNCTAD developed six studies of cases of global value chain, based on leading multinational companies: Toyota in South Africa, Volkswagen in Mexico, and Tata Motors in India (automobiles, parts and components); Microsoft in Egypt, and IBM in Vietnam (software); Caracol in Colombia, and NuMetro in Nigeria (cinema and audiovisual). Using questionnaires, the research searched for data related to: 1. Knowledge or understanding of global value chains; 2. Cooperation and types of links in global value chains; 3. Relevance of the technological capability, standards, and copyrights; and 4. Support expected from the governments (UNCTAD 2010b: part I).[50]

The studies about the industry of parts and components for automobiles, which is the most relevant for this document, showed that multinational automotive manufacturing companies had reduced the number of first level suppliers to improve the competitiveness. These first level suppliers are responsible for supplying automotive parts and components globally, complying with the standards of "original equipment manufacturing". The upgrading of the scale of first level suppliers may lead to its transformation into multinational companies, creating a new dynamic in the industry, and forcing local minor suppliers to adapt.

Both case studies, in South Africa and Mexico, conclude that most local independent suppliers did not manage to establish links with their bigger partners, for the global supply or to improve their own capabilities to reach the standards of the manufacturers of original equipment (OEM). Although there were opportunities for local third level SMEs to be upgraded to second level suppliers, no company could live up to the expectations of multinational companies, and of its OEM partners, in terms of quality of the products, and compliance with production and delivery times. On the other hand, some local companies, which were first level suppliers, lost their level to global suppliers because they were not able to operate as "total-solutions suppliers".

In Mexico, SMEs are second and third level suppliers for Volkswagen parts and components. The study was interesting because second and third level suppliers did not participate on the transfer of information and technology, which takes place between the assembler and the first level suppliers. For this reason, according to UNCTAD research, no local SME was able to use their link with the value chain, as a trampoline for their own internationalization, given the absence of specific competitive advantage, in terms of technological training. Also, the capability of these companies to finance the internationalization process, including the need to live up to the international standards of quality, was and still is very limited.

It is worth mentioning that the OCDE-UNCTAD study found evidence indicating that large first level supplying companies would rather import the supplies, and that a low rate of the value is locally added to the products. The Mexican government created an industrial park near the Volkswagen plant in Puebla, and three other parks in Tlaxcala, where the cluster of automotive SMEs is located.[51] Also, multinational companies established research centres, certification support, financing, and training for exporting development, but the impacts on the improvement of the positions of Mexican companies are still limited.

---

[50] The next paragraphs are from UNCTAD 2010b: 10-15.

[51]Experiences in South Africa illustrate the positive effects of institutions to support the incubation of technology, with the support of multinational companies such as Siemens and Microsoft, and that contribute to the transfer of technology (UNCTAD 2010a).

In Brazil, it is worth recalling the case of Metal Leve, specialized in car parts, and that got to be a first level supplier in global car chains, supplying innovative technological solutions to the car manufacturing company. However, it was the victim of the implementation of price control programs, and of the overvaluation associated to the Real. The company was sold in 1996 to German Mahle. [52]

Pietrobelli and Rabellotti (2006) coordinated an extensive study on the SMEs experience in Latin America, in different value chains, starting with industrial clusters. The studies explored the hypothesis, which was also presented in this document, indicating that the improvement of competitive conditions of a company depends simultaneously on the efforts in the framework of the company, and on external factors related to the productive, technological, social, and institutional context, in which the companies function. In order to analyze the performance of the SMEs, the authors created a complex scheme relating the variables of the clusters, the characteristics of the global value chains, and the innovations characteristics of the economic sectors. Particularly, the case studies intended to evaluate the impact of three sets of upgrading variables, towards the inside of the different value chains: 1. The collective efficiency of the cluster in which the SMEs are established; 2. The value chains and their governance; and 3. The patterns and characteristics of the learning and innovation process in specific sectors in which the chains are included.

Case studies in the IDB document included six productive complexes: 1. A dairy cluster in the province of Baaco and Chontales in Nicaragua; *2.* Two clusters in Brazil (one of fresh fruit and a metal-mechanic one in Brazil); 3. The salmon cluster in Chile, 4. Two clusters in Mexico (one of furniture and another of software). In total, there are three clusters in the natural resources sector, two in traditional manufacturing, and one in specialized supplying (*software*) (in Keith Pavitt classification).

The authors found evidence of the variety of forms of organization and governance of the value chains coexisting in the same productive complex, with companies participating in local and in global value chains, especially in traditional manufacturing sectors and based on natural resources. For instance, in the case of dairy products in Nicaragua, the companies in the cluster participated in three different types of productive chains: 1. A chain led by a multinational company; 2. Chains led by a medium-sized processing company from El Salvador, and by dealers; and 3. A chain led by small local cooperatives. Hierarchic governance patters were observed in the productive chain led by a multinational company, and the chains led by agents in El Salvador, while a network-type governance form dominated in the value chain led by local cooperatives.[53]

During the last decade, the splitting in two of the Latin American and Caribbean division, to favour more or less participation in the value chains oriented towards the U.S., is part of the "stylized" knowledge of the region. South America is known by its natural resources, and by the prevalence of agricultural and mineral commodities, and of semi-manufactured products in its exports. For this reason, some authors suggest that the focus of the value chains can be useful, but insufficient for the study of the insertion of South

[52] In Brazil, acquisitions by multinational companies or by their affiliates, during the privatization of telecommunications and energy companies, caused the contraction or closing of local SMEs, with investments in research and development (UNCTAD 2010a). For a full description of the Metal Leve experience, see Ventura-Dias 1994.

[53] For details of the studies of the clusters, see Pietrobelli and Rabellotti (2006). For Central American dairy agro-industry. See Zuñiga-Arias 2011.

America in the global economy (Motta Veiga and Rios (2010)). The unavoidable conclusion is that South American countries should use their wealth in natural resources to establish regional value chains, through virtuous associations between public and private sectors, thus adding value to their commodities.

The successful experience of Asian countries, mainly China, is a perfect example of the fact that participation of developing countries' companies in value chains has to be accompanied by public policies and private investment, so as to improve the capacity of the companies to absorb knowledge, and to add technological innovation to products and processes.

VI. POLICIES TO SUPPORT THE INSERTION OF SMEs INTO GLOBAL VALUE CHAINS

In literature about the industry there is consensus that markets alone are not enough to promote the improvement of the innovative capacities of SMEs. There is also consensus about the need to promote relations between SMEs and local and multinational companies, encourage their insertion into global value chains, and the sustainable growth in them. Public policies are still necessary, as well as the institutions that formulate and execute them. It is essential for those policies to be comprehensive (credit, training, exporting development, and innovative capabilities), continuous and coherent.

Companies are organizational. In other words, they are formal structures, deliberately created with an explicit objective. They interact with other companies and organizations, such as universities, regulatory and financial agents, trade associations, among others. At the same time, the laws, regulations, rules, social norms, technical standards and cultural habits constitute the institutional background in which companies and other organizations interact. It is important to highlight that such institutions can foster progress or limit the interactive learning process that is essential for the upgrading/improvement process of companies (Pietrobelli and Rabellotti 2006: 5).

In Latin America and the Caribbean, the low productivity of SMEs is not only due to the scale in which they operate. The excessive informalization of the sector, the absence of a medium layer of small innovative companies, limits the access of SMEs to formal local and external markets. SMEs are limited by management deficiencies, low level of cooperation with other companies, weak support institutions, and by a regulating environment that has traditionally been biased in favour of large companies.

Public policies are not neutral. On the contrary, they have different effects on the expansion of companies of different sizes, they can provide for incentives for the vertical integration of large companies, or favour the autonomy of specialized suppliers. For instance, Zeitlin (1995) described how between 1900 and 1975, the United Kingdom, the country in which the Marshallian districts originated, became one of the most concentrated capitalist economies, with little dynamic agglomeration of SMEs. This result counted on the contribution of the consolidation and centralization of the British banking system, the State's and the capitals markets promotion of industrial clustering, through merges and acquisitions, in tandem with the progressive reduction of the autonomy of local governments. In the U.S., the policies that should protect SMEs, such as the anti-trust legislation, promote mergers and clustering of the U.S. industry (Zeitlin 2008: 227-230).[54]

[54] During the Great Depression in the United States, Congress passed the Robinson-Partman Law, also called the small business Constitution, as well as the Miller-Tydings Law for Fair Trade. In 1953, the Congress created the Small Business Administration. Imbued by the principles preached by Thomas Jefferson indicating that small businesses were the backbone of democracy (a middle-class with properties was the social base of a democratic capitalism) small companies' advocates pressured Congress for a legislation that would limit the

The experience of the various European industrial districts focuses our attention on the role of regional and local governments, and on the importance of joint private-public initiatives. The role of central governments in formulating industrial clusters is important, but in general, local governments are the ones that play the role of facilitators that is necessary to intermediate cooperation relations between different sized companies. However, European experiences do not contribute any lessons on how to foster an industrial clustering, since in Europe the actions of the governments were born in a relatively advanced state of industrial development of the districts.[55] At the same time, the experiences showed the importance of the various mechanisms for the solution of collective action problems.

The growth of the industrial districts, and of SMEs within them, was explained by the local and regional policies, and by other institutional channels promoted by business associations. Particularly, policies were aimed at the creation of institutions to provide services to the companies present in the clusters. For instance, the government of the Emilia-Romana started with two clusters: Carpi, specialized on the textile industry, and Regio Emilia-Modena specialized on the production of agricultural machinery. Agencies of local governments were created to supply information on markets and technology, especially on information technology and communication systems, and also on training for the workers of the companies (Boari 2001: 14).

Comparative studies between countries (Germany, Denmark, Italy, France, Japan, United States, Great Britain) conclude that the axis of the performance variation of the industrial districts in these countries were the territorial structure of the banking and financial system, the relative concentration of the distribution of retail, the effectiveness of the merging and rationalization policies, the form and intensity of the antitrust regulation, the extent of political tolerance and/or the incentives to partnership governance, as well as the balance between administrative centralization and local autonomy (in Zeitlin 2008: 231).

In Japan, as in Italy, local and regional governments were instrumental in the support for SMEs, and in the contribution of physical and training infrastructure.[56] Since late 19th century, all kinds of Japanese SMEs associations worked jointly with local and provincial administrations to adapt imported technologies, improve local production methods and training of workers, through the creation of experimental workshops, labs, and research institutes, commercial and technical schools, whose numbers, scopes, and sophistication continued to expand during the second half of the 20th century. Several institutions that worked before the war, in the 1920s and 1930s, were replaced by trade partnerships and by cooperatives that are still providing a set of collective services to localized clusters. In the previous period, the national government, in order to reinforce the cooperation between groups of local SMEs, specially between those that produced to export, created industrial or manufacturing associations with strong compulsory membership powers, and

---

power of large companies (including big retail stores). Afterwards, they defended financial support laws and other similar legislations (Bean 1996).

[55] Some experiences in Latin America and the Caribbean showed that public institutions could promote relations between companies, fostering cooperation in creating networks of SMEs (Humphrey and Schmitz 1995).

[56] Starting in 2001, the METI (Ministry of the Economy, Trade and Industry) in Japan announced that the promotion policies for industrial clusters, mainly the knowledge clusters, would comprise a central component of Japan's industrial policy. For the execution of the project, local governments worked jointly with the agencies within the national framework. For instance, in 2009, Tokyo's metropolitan government launched a business consortium, the Association of Advanced Manufacturing Companies for the Resolution Aviation Systems (AMATERAS), comprised by SMEs with different backgrounds in engineering, to provide comprehensive manufacturing solutions for the aerospace industry, for Japan and for foreign markets.

authorized to perform collective activities, such as joint purchases, processing, marketing, and intermediation credit, and so they achieved a better balance between SMEs and large companies (in Zeitlin 2008: 230).[57]

Literature guides our attention to two essential elements in the discussion about the insertion of the companies from developing countries into value chains: 1. Value chains are dynamic; and 2. In each sector different value chains coexist, some local, others regional, and others global. The companies have to consider that the participation in a type of chain does not prevent their participation in some other chain (Pietrobelli and Rabellotti 2006; Motta Veiga and Rios 2010). The challenge for each country is to identify what kind of measure is appropriate for specific circumstances. The objective is to strengthen the productive capabilities of the suppliers so as to contribute to enable them to produce goods and services with more added value in an internationally competitive environment,

Which are the objectives of the policies for insertion of SMEs into global value chains? Besides integrating SMEs into the global value chains, it is essential for the companies to participate in the transference channels of knowledge and added value.

In defining more effective policies, it is necessary to better understand how different mechanisms work in different types of chains. In which chains the leading companies promote learning only due to pressures (effect of competition)? In which situations leading companies support the innovation process through a deliberate transfer of knowledge and direct commitment in the process of learning and innovation? When does this type of learning results from unexpected overflowing? (Pietrobelli 2012).[58]

The formulation of policies to induce links between companies is a new and experimental area. The biggest challenge for the formulation of policies in that area is understanding the source of the potential benefits from an increase in cooperation among companies, the context that might facilitate such collaboration, and the potential instruments to induce cooperation (Berry 1997). It is not easy to identify instruments or policies that could promote relations between companies, but there have been policies to encourage large companies to establish innovation centres to improve capacities of SMEs (UNCTAD 2010a).[59]

UNCTAD (2010a) presented some case studies of relations between multinational companies with operations in Brazil and Mexico and local SMEs. In Brazil, a survey was conducted with the multinational companies in 2006, involving 149 workers in the management of the chain of suppliers and logistics of 25 companies and 105 SMEs (UNCTAD 2010a: 6-). As it is traditional in Brazil, most multinational companies served the national market, and less than 14% had exporting activities. The general conclusions were that the links between both types of companies remained in the sectors with low access obstacles; and that the multinational companies supported the SMEs with training, in very rare cases financial support or with assistance for technological improvement. As

[57]Zeitlin (2008: 230) also mentions researches that showed how SMEs and their associations managed to keep the powerful Ministry of Industry and Trade (MITI) from achieving its goal of rationalizing and concentrating sectors considered to be fragmented, such as those related to machines and tools, and auto-parts.

[58] See the presentation by Carlo Pietrobelli on the Seminar "Latin America's Prospects for Upgrading in Global Value Chains", El Colegio de Mexico, 15-16 March 2012, (http://www.cepal.org/comercio/conference_LAC_GVC_MX_mar_2012/).

[59] See the works by researchers of the Latin American Trade Policy Network (LATN) in (http://www.latn.org.ar).

expected, the biggest restrictions set by multinational companies for upgrading their links with SMEs were about the problems that SMEs face in complying with the quality and safety standards, on-time deliveries, and technological and service quality level. The study concluded that, in spite of a wide support programme for SMEs, the Brazilian government did not have a comprehensive focus yet for the creation of business links between SMEs and multinational companies.

In Mexico, UNCTAD (2010a: 109-115) described the attempts of the federal government to encourage meetings between buyers and sellers in order to create local purchasing opportunities for multinational companies. The document describes the evolution of SMEs in two clusters and value chains: the electronics complex in Guadalajara, and the automotive complex in Puebla. In Guadalajara, both IBM and Hewlett Packard, among the multinational companies, behaved just like Volkswagen did in the previous case, bringing their first-level global suppliers, and only at the second level did they involve some local companies. A support programme for local companies to reach high technological and organizational levels (Electronic Productive Chain – CADELEC) was established with resources from the government of Jalisco, the federal government, and associations with large electronic companies. The programme has been successful in improving access of local companies as second and third level suppliers.

In the literature on value chains, the recurrent subject is cooperation between companies, although in many cases the relations may be authoritarian and of subordination between the leading companies and their suppliers. Asia has been the wedge of the regional value chains, based on the strategy of Japanese companies. As we have already mentioned in different parts of this document, the governments of different Asian countries, and more recently of China, promoted cooperation between local companies, between companies of different size, between companies of complementary industries, and between companies of neighbour countries, through public policies, supported by a converging view of the heads of the companies. These are common-sense measures that, in spite of the political differences, the lack of a common language, colonial pasts, and grudges, contributed to the *de facto* integration of parts of Asia, and to the construction of regional value chains.

In Latin America and the Caribbean, as suggested in a previous SELA document (2011), there are serious gaps in infrastructure and logistics that result in high transportation and distribution costs, and high piling up of stocks that prevent the creation of regional supplier chains. Internal transportation is basically unimodal, with the goods transported by truck, and, secondarily, by train, while foreign trade is basically made through sea channels. According to a recent study, in 2004, logistics costs reached over 30% of the value of the products in Peru; between 25% and 30% in Argentina and Brazil; and between 20% and 25% in Chile and Mexico. These values are compared to a rate of less than 8% on average for OCDE countries. Transportation costs constitute most of the logistics costs (Guascg and Kogan 2006; 2010 in SELA 2011, page 38).

However, it was not the modern Asian infrastructure that promoted the productive integration in the region. Quite the opposite, incipient integration urged investments in infrastructure. What was observed in Asia, as well as in other regions, was a productive process of gaps between supply and demand of transportation infrastructure, energy and telecommunications. Transactions between companies from different countries and between countries from the same region generated a demand for investments that could solve bottlenecks generated by the expansion of the transactions, as explained by Albert Hirschman over 50 years ago (Hirschman 1958). It is expected that this dialectic relationship between potential demand and long-term investment would become a

reality in Latin America and the Caribbean in the near future, as suggested by initiatives such as the Mesoamerica Project and IIRSA (Initiative for the Integration of South American Regional Infrastructure).

IV. CONCLUSIONS AND RECOMMENDATIONS: LESSONS FOR LATIN AMERICA AND THE CARIBBEAN

Global value chains and global suppliers' networks constitute categories, although imprecise, used to interpret the process of fragmentation of the production of goods and services, their geographic dispersion, as well as the inter-enterprises relationships, and those derived from trade flows. Associated to the complex process of labour division and specialization, and internationalization of companies, global value chains expanded in the last decade of the 20th century with the large network of suppliers established in Asia, and the innovations in information technology, communication, and transportation, which reduced internationalization costs, and facilitated the distance coordination of the relations among companies.[60] In spite of the dominating control exercised by multinational companies throughout the global value chains, different size companies, located in different countries, intervene in the supplying of the supplies of goods and/or services in the different knots of the value chain.

Large companies changed their functions and structures. In the past they performed all the production functions of their plants, but now they have become global agents that delegate a large number of productive processes in other highly specialized companies. The expression "chop the value chain into pieces," used by Paul Krugman in a presentation in 1995, expresses this move of large companies to reduce costs and expand their profits (Krugman 1995). From the point of view of large-sized companies, value chains are instruments to transfer the less profitable segments to smaller specialized units, in countries with lower wages, while keeping the most profitable operations under their direct control, such as marketing, and research and development. In the global value chains, leading companies are supported by a network of independent companies, although interconnected with each other, in order to benefit from the differences in costs and prices between companies and regions.

This idea is properly illustrated by Apple's profits, with its products iPod, iPhone, and iPad. Kraemer, Linden and Dedrick (2008, 2011) described how the final manufacturing (assembling in China) of one product (video iPod) represented nearly 4 dollars of a total of 299 dollars, out of which 80 dollars (27%) found their way back to Apple.

For these reasons, value chains present certain dilemmas for SMEs in the countries of the region. On the one hand, as explained in section 2, productive fragmentation is more favourable to the survival of the SMEs than the vertical integration of the large multinational companies. On the other, several questions remain unanswered regarding the real improvement possibilities of the positions of the suppliers in Latin America and the Caribbean in the global value chains. There are evidences indicating that the coordination forms of the global value chains affect the upgrading conditions of supplying companies. In the captive value chains, in which SMEs participate in simple "cut, make, trim" operations, the maintenance of this participation by the companies depends on the global competition for costs and prices, which cannot be sustained in the medium term. In other words, the only way to achieve sustainable growth for the SMEs

[60] Another factor that contributed to the distance coordination of the geographic dispersion was the security of copyrights, as a consequence of the bilateral investment agreements signed throughout the 1990s between countries, and multilateral agreements in the WTO (World Trade Organization).

in global value chains is through the improvement of products and/or processes, and through the functional upgrading of the companies. As it has already been proposed, SMEs can achieve a collective efficiency in the clusters or productive complexes.

SMEs are economic agents with a strategic role in economic growth with social inclusion, as they are clear sources of work and income. Through articulation between different size companies, technological knowledge can be homogenized, generating a critical mass for productive innovation in the country. When this critical mass is finally achieved, the country stops having peripheral characteristics, as proposed by Don Raul Prebisch, to become a Central country. According to the great Latin American development thinker, the Centre is characterized by its diversity and homogeneity, while the Periphery is characterized by its specialization and heterogeneity. The Centre is homogeneous because it has a medium layer of smaller companies that are innovative and highly productive. Some of them make a transition to the layer of the larger companies, as recently happened with Apple, Microsoft, Hewlett-Packard, and many others. The Periphery is specialized and heterogeneous because technological knowledge is concentrated in the big exporting companies, while in society co-exist different forms of production from different times, and the medium layer of modern and innovative SMEs is not present.

It is important for those governments of the region that have achieved a significant reduction in the social gap, and in the concentration of the income, to look for solutions to create the "missing link", the missing medium layer between big exporting and competitive companies, and the informal universe of the great majority of SMEs.

For companies with little resources, policies that affect the costs of doing business are the most effective ones. Companies of smaller relative size need public goods, such as the improvement in the physical infrastructure, commercial logistics infrastructure, and customs. In the context of the company, SMEs require concrete measures focused on the improvement of their innovative capacity, favouring the creation and adaptation of technology, compliance with international production quality and certification standards. Similarly, it is essential to strengthen the local capability to assimilate technology and knowledge.

Throughout this document, different experiences concerning the insertion of SMEs, grouped in industrial clusters, in the global production chains were mentioned, and different components of policies were described. Studies showed that the expansion or decadence of the industrial districts was not just the result of relative efficiencies of companies of different sizes; but they also showed that policies, institutions and copyrights regulations contributed to it. The creation of industrial clusters is essential to strengthen the innovative capabilities of SMEs, and to promote the cooperative exchange of knowledge, information, and technology between companies. To this end, local and state governments (provincial) are the most effective because they are closer to the local economy, to its agents and to its problems. Nonetheless, national governments are also essential to provide resources, legislation, and legal protection.

In Latin America and the Caribbean there are important experiences of industrial clusters that supported a successful international insertion of the companies, although never to the extent of Eastern and Southeast Asia, including China.

Empirical knowledge of value chains is very rough, in spite of the extensive literature accumulated during the last 20 years. Particularly, some authors highlight the power relations established in the networks in which a small number of global buyers have

access to the markets of rich countries. The power asymmetry between these buyers and the sellers of "tasks" in developing countries create relations of dependency between a large but scattered number of suppliers of intensive tasks in poorly qualified work and a reduced number of global buyers.

It is crucial to gain better knowledge about the power relations established in the global value chains, and the relations that the global value chains have with the local and regional chains. The experience of countries from Asia-Pacific showed that the insertion of SMEs into global value chains is a game in which local, regional and global variables converge.

It is worth saying again that the regional productive integration and the creation of regional value chains are long-term processes, but they have to start now. As proposed in a SELA document (2011), there already are two frameworks for regional and sub-regional cooperation in infrastructure (IIRSA and the Mesoamerica Project), which should be backed with concrete actions. Governments of the region already identified the integration and development axis that have a lot of potential for the creation of regional productive chains, as long as the physical connections are established between the production of raw materials, processing, industrialization, and the supplying of support services.

In the region several companies exporting natural resources participate in global networks as buyers of goods and services, but there are no empirical studies about them. The purchase power of companies like the ones dealing with oil (Pemex, Petrobras, PDVSA), iron ore (Vale do Rio Doce) among others, and the capacity they have to affect the creation and expansion of clusters of suppliers, call for extensive and detailed empirical studies. Particularly, the productive integration in the framework of MERCOSUR (Common Market of the South) intends to use the expansion of purchases of the big companies to improve the quality of sub-regional suppliers (GIP/AECID 2010).

A recent UN document stated that the promotion of development of value chains had turned into a key area for international cooperation. Similarly, the value chain was recognized as a promising perspective to tackle economic development, the creation of jobs, and inclusive growth, as well as a wide set of subjects of social and environmental development. A group created to increase the coherence of the work of the United Nations on the subject gathered ten agencies that are already committed to the research and concrete works on value chains.[61]

At the regional level, economic cooperation agencies, such as SELA, ECLAC and IDB, have accumulated important experiences in the research of different aspects of value chains that are relevant for Latin American and Caribbean governments. SELA, in particular, has kept a continuous work of research and debate in subjects that associate changes in the organization of production, support policies for modernization, and production efficiency of SMEs, pro-active policies for quality insertion of Latin America and

[61] They are: FAO (Food and Agriculture Organization), IFAD (International Fund for Agricultural Development), ILO (International Labour Organization), ITC (International Trade Centre), UNCDF (United Nations Capital Development Fund), UNCTAD (United Nations Conference on Trade and Development), UNECE (United Nations Economic Commission for Europe), UNDP (United Nations Development Program), UNIDO (United Nations Industrial Development Organization), and WFP (World Food Program) (See "Value Chain Development. Approaches and Activities by Seven UN Agencies and Opportunities for Inter-Agency Cooperation": http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/---ifp_seed/documents/publication/wcms_170848.pdf).

the Caribbean, and the productive integration in the framework of regional integration agreements.

As we have seen in this brief document, literature on global value chains is huge, and the subjects associated are very complex, involving policies specific for SMEs, construction of productive complexes, interrelation between local clusters, regional and global value chains, innovation policies, and policies for the construction of links between companies of different sizes.

Changes in the organization of world production and trade led exporting companies of the region to get involved, directly or indirectly, with some type of suppliers' network or global value chain. In most cases, companies produce locally for large national or multinational exporting companies, which in turn comprise other knots of the complex networks and production chains and of value adding. The knowledge about these "maps" of production and of world trade is still very incipient. However, each leading big company knows its value chain very well, and such information takes the shape of an important asset in the global competitiveness of the company.

The concern about local and regional capturing of value generated in the production chain is not new, but it can be said that the high international competition generates a more urgent and demanding need to formulate and implement policies aimed at the productive, organizational, and innovative training of SMEs, in order to improve the international insertion of Latin American and Caribbean economies.

Improving the international insertion of Latin American and Caribbean economies has been the basic concern of the work of SELA since its creation. SELA has also accumulated vast experience in the subject of modernization of SMEs and their globalization.

In order to support the governments of the region in their efforts to improve the capabilities of SMEs in their countries, proposals are made for SELA to:

1. Perform systematic studies on the region's initiatives for creating industrial *clusters* and their insertion into global value chains.
2. Conduct systematic studies oriented to analyze in depth the Asian experience regarding the establishment of regional productive networks and the improvement of relations among SMEs and large-sized enterprises.
3. Carry out systematic studies concerning the efficiency of public policies' programmes and public-private alliances related to the modernization and development of SMEs, and their internationalization.
4. Foster opportunities for cooperation and evaluation in other regional international cooperation agencies as means to achieve greater consistency in their research papers on global value chains, by the systematization of concepts and research methods.
5. Move forward in the establishment of an information system on suppliers' regional chains initiatives, specifically on product chains based on natural resources, by identifying the main obstacles for the establishment of cooperative relations among enterprises in the region's countries.
6. Promote spaces for dialogue and debate about how the purchasing power of large natural products exporting enterprises affects the establishment of regional suppliers.
7. Perform systematic studies on the main global value chains to which Central American and Caribbean countries are integrated in order to identify the

governance, the power relations, and the opportunities for knowledge generation and interchange, and also to identify means to improve and increase capabilities.

8. Systematize and disseminate information on the metric to analyze successful cases of insertion of regional enterprises into global value chains.

9. Continue the analysis and dissemination of studies concerning the bottlenecks in the physical infrastructure (transport, telecommunications, and electricity), and the progress of initiatives such as IIRSA and the Mesoamerica Project.

10. Disseminate the researches' results alongside the governments and academic media.

.

BIBLIOGRAPHY

ADB (Asian Development Bank) (2009), 'Enterprises in Asia: Fostering Dynamism in SMEs,' *Key Indicators for Asia and the Pacific 2009*, Special Chapter (available at http://www.adb.org).

Altenburg, Tilman (2008), Value chain governance. Is it "supply chain management" vs. "pro-poor upgrading of value chains"? Discussion Paper, June, (available at http://www.smnr-cv.org/downloads/webdownloads/558904/0806_Value_Chain_Governance_Discussion_Paper_Eng.pdf).

Amatori, Franco and Andrea Colli (2007), 'Strategies and Structures of European Enterprise,' *Revue Économique*, Vol. 58, No. 1, pp. 37-57.

Ando, Mitsuyo and Fukunari Kimura (2005), 'The Formation of International Production and Distribution Networks in East Asia,' in Takatoshi Ito and Andrew K. Rose (Ed.), *International Trade in East Asia, NBER-East Asia Seminar on Economics, Volume 14* (Chicago: University of Chicago Press), pp. 177-216 (available at http://www.nber.org/chapters/c0194.pdf).

Angelelli, Pablo, Moudry (2006), *Institutional Capacities for Small Business Policy Development in Latin America and the Caribbean* (Washington, D.C.: IADB) (d available at http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=876121).

Artola, Ner and Mario DavideParrilli (2006), 'The Development of the Dairy Cluster in Boaco and Chontales, Nicaragua,' in Carlo Pietrobelli and Roberta Rabellotti (Ed.), *Upgrading to Compete. Global Value Chains, Clusters, and SMEs in Latin America* (Washington, DC: Inter-American Development Bank), pp. 43-70.

Baldwin, Richard E. (2011), 'Trade and Industrialisation After Globalisation's 2nd Unbundling: How Building and Joining a Supply Chain Are Different and Why It Matters,' in Robert C. Feenstra and Alan M. Taylor (Ed.), *Globalization in an Age of Crisis: Multilateral Economic Cooperation in the Twenty-First Century* (Chicago: University of Chicago Press).

Bardhan, Pranab (2005), *Scarcity, Conflicts and Cooperation (Essays in the Political and Institutional Economics of Development)* (Cambridge, Massachusetts: MIT Press).

Bean, Jonathan J. (1996), *Beyond the Broker State. Federal Policies toward Small Business 1936-1961* (The University of North Carolina Press).

Becattini, Giacomo (2002), 'Small Business and Entrepreneurship in the Thought of Alfred Marshall: On Their Empirical Basis and General Meaning,' *Global Award for Entrepreneurship Research*, (available at http://www.e-award.org).

---- (2003). Industrial Districts in the Development of Tuscany, in Giacomo Becattini, Marco Bellandi, Gabi Dei Ottati and Fabio Sforzi (eds.), *From Industrial Districts to Local Development: An Itinerary of Research*, Cheltenham: Edward Elgar, pp 11-28.

------- (2004), From Marshallian to Italian Industrial Districts: A Brief Critical Reconstruction, in Giacomo Becattini (Ed.), *Industrial Districts: A New Approach to Industrial Change* (Cheltenham, UK: Edward Elgar Publishing Limited), pp. 67-87.

----------, Marco Bellandiy L. De Propris (2010), Critical Nodes and Contemporary Reflections on Industrial Districts, Paper submitted at the Annual International Conference of the Association of Regional Studies, 24-26 May (available at http://www.regional-studies-assoc.ac.uk/events/2010/may-pecs/papers/Becattini.pdf).

Bellandi, Marco (2007), Industrial Districts and Waves of Industrialization: A Rich and Contested Terrain. *Scienze Regionali, Italian Journal of Regional Studies, N.* 6, pp. 7-33.

Berger, Suzanne, Timothy Sturgeon (1999), 'Globalization, Value Networks, and National Models', *MIT IPC Globalization Working Paper*, No. 99-000.

Berry, Albert (1997), SME Competitiveness: The Power of Networking and Subcontracting (available at http://www.microfinanzas.org/uploads/media/0793.pdf).

Boari, Cristina (2001), 'Industrial Clusters, Focal Firms and Economic Dynamism: A Perspective from Italy', *World Bank Institute Stock*, No. 37186, June, (available at http://siteresources.worldbank.org/WBI/Resources/wbi37186.pdf).

Carnevali, Francesca (2004), 'Crooks, Thieves and Receivers: Transaction Costs in Nineteenth-Century Industrial Birmingham', in *Economic History Review*, Vol. 62, N. 3, pp. 5330550.

ECLAC (2005), *Aglomeraciones en torno a los Recursos Naturales en América Latina y el Caribe: Políticas de Articulación y Articulación de Políticas* (Santiago de Chile: ECLAC) available at http://www.eclac.cl/publicaciones/xml/6/24276/lcg2285e.pdf).

Chandler, Jr., Alfred D. (1962), Strategy and *Structure. Chapters in the History of the American Industrial Enterprise*, Cambridge, Massachusetts: The MIT Press.

---------- (1977), *The Visible Hand (The Managerial Revolution in American Business)* (Cambridge, Massachusetts: The Beknap Press of Harvard University Press).

---------- (1990), *Scale and Scope: The Dynamics of Industrial Capitalism*. Cambridge, Massachusetts: The Beknap Press of Harvard University Press.

Clark, Rodney (1979), *The Japanese Company, New Haven: Yale University Press.*

Courlet, Claude (2005) 'Les systèmes productifs en France. Une histoire récente', in Michel Lescure (ed.) *La mobilisation du territoire: les districts industriels en Europe occidentale, du XVIIe au XXe siècle Colloque des 5 et 6 février 2004*. Paris: Comité pour l'Histoire Économique et Financière de la France.

Dedrick, Jason, Kenneth L. Kraemer and Greg Linden (2008), `Who Profits from Innovation in Global Value Chains? A Study on the IPod and Notebook PCs,' *Industry Studies 2008*, May (available at http://web.mit.edu/is08/pdf/Dedrick_Kraemer_Linden.pdf)..

de la Mora, Luz María (2010), Interview, in Revista Integración & Comercio, Vol. 14, N. 31, July-December, pp. 117-127.

Economist Intelligence Unit (2010), *SMEs in Japan. A New Growth Driver?* London, The Economist, available at http://www.managementthinking.eiu.com/sites/default/files/EIU_Microsoft_Japan SMEs_FINAL-WEB.pdf.

Ernst, Dieter (2006), 'Searching for a New Role in East Asian Regionalization: Japanese Production Networks in the Electronics Industry', in Peter J. Katzenstein and Takashi Shiraishi (Ed.), *Beyond Japan. The Dynamics of East Asian Regionalism* (Ithaca: Cornell University Press).

Ferraro, Carlo (ed.) (2010), *Clusters y Políticas de Articulación Productiva en América Latina.* Santiago de Chile: ECLAC available at http://www.fundes.org/uploaded/content/publicacione/1736743486.pdf.

---------- and Francisco Gatto (2010), "Políticas de articulación productiva. Enfoques y resultados en América Latina", in Carlo Ferraro ed., pp. 13-38.

---------- and Giovanni Stumpo (eds.) (2010), *Políticas de Apoyo a las PyMEs en América Latina. Entre Avances Innovadores y Desafíos Institucionales.* Santiago de Chile, ECLAC, available at http://www.cepal.org/publicaciones.

Frederick, Stacey and Gary Gereffi (2011), 'Upgrading and Restructuring in the Global Apparel Value Chain: Why China and Asia are outperforming Mexico and Central America', *International Journal of Technological Learning, Innovation and Development*, Vol. 4, No. 1/2/3, pp. 67-95, available at http://inderscience.metapress.com/content/2q13532542717415/fulltext.pdf.

GIP (Productive Integration Group of MERCOSUR) / AECID (Spanish Agency of International Cooperation for Development) (2010), *Integración Productiva. La Integración Productiva en la Nueva Agenda del Mercosur.* Montevideo, Uruguay: AECID, available at http://www.gipmercosur.org/files/Libro-GIP.pdf.

Gereffi, Gary (1999), "International trade and industrial upgrading in the apparel commodity chain" in *Journal of International Economics*, Vol. 48, N. 1, June, pp 37-70, available at http://www.soc.duke.edu/~ggere/web/gereffi_jie_june_1999.pdf).

----------, John Humphrey and Timothy Sturgeon (2005), 'The Governance of Global Value Chains', *Review of International Political Economy*, Vol. 12, No. 1, February, pp. 78-104.

---------- and Olga Memedovic (2003), *The Global Apparel Value Chain: What are the Prospects for Upgrading by Developing Countries.* Vienna, UNIDO, available at http://www.unido.org/fileadmin/media/documents/pdf/Services_Modules/Apparel_Value_Chain.pdf.

Giuliani, Elisa and Martin Bell (2008), Industrial Clusters and the Evolution of Their Knowledge Networks: Revisiting a Chilean Case, available at https://www.sussex.ac.uk/webteam/gateway/file.php?name=sewp171&site=25).

Greenstein, Shane (2005), "Outsourcing and climbing a value chain", in *Micro Economics*, September-October, available at http://www.kellogg.northwestern.edu/faculty/greenstein/images/htm/Columns/Outsourcing.pdf).

Grunwald, Joseph and Kenneth Flamm (1985), *The Global Factory: Foreign Assembly in International Trade,* Washington, D.C. Brookings.

Herrigel, Gary and Jonathan Zeitlin (2010), 'Inter-Firm Relations in Global Manufacturing: Disintegrated Production and Its Globalization', in John Campbell, Glen Morgan, Colin Crouch (Ed.), *The Oxford Handbook of Comparative Institutional Analysis.* Oxford: Oxford University Press, pp. 527-564.

Hirschman, Albert O. (1958), *The Strategy of Economic Development*, Yale University Press, New Haven: Connecticut.

Hobbs, Jill Elizabeth. A. Coone and M Fulton (2000), Value chains in the agri-food sector. What are they? How do they work? Are they for me? Department of Agricultural Economics, University of Saskatchewan.

Humphrey, John and Hubert Schmitz (1995), *Principles for Promoting Clusters & Networks of SMEs.* Vienna, UNIDO, available at http://www.unido.org/fileadmin/media/documents/pdf/SME_Cluster/Humphrey.pdf).

---------- (2000), 'Governance and Upgrading: Linking Industrial Cluster and Global Value Chain Research', *IDS Working Paper*, No. 120.

---------- (2001), 'Governance in Global Value Chains', *IDS Bulletin*, Vol. 32, No. 3, available at http://www.ids.ac.uk/files/dmfile/humphreyschmitz32.3.pdf).

Lamoreaux, Naomi R., Daniel M. G. Raff and Peter Temin (2002, July), Beyond Markets and Hierarchies: Towards a New Synthesis of American Business History, available at http://www.nber.org/papers/w9029.

Langlois, Richard N. (2002), 'The Vanishing Hand: The Changing Dynamics of Industrial Capitalism', *Department of Economics, Working Paper Series*, No. 2002-21, November.

---------- and Paul L. Robertson (1989), 'Explaining Vertical Integration: Lessons from the American Automobile Industry', *Journal of Economic History*, Vol. 49, No. 2, June, pp. 361-375.

Johnson, Chalmers (1982), *MITI and the Japanese Miracle. The Growth of Industrial Policy, 1925-1975*, Stanford, California: Stanford University Press.

Kimura, Fukunari (2001), 'Subcontracting and the Performance of Small and Medium Firms in Japan', *World Bank Institute Stock*, No. 37192.

Kitagawa, Hironobu (2007), 'The Procurement Activities of Japanese Companies in Asian Countries', in Hank Lim (Ed.), *ASEAN SMEs and Globalization.* ERIA (Economic Research Institute for ASEAN and East Asia), pp. 365-399.

Kraemer, Kenneth L., Greg Linden and Jason Dedrick (2011, Julio), Capturing Value in Global Networks: Apple's IPad and IPhone, available at http://pcic.merage.uci.edu/papers/2011/Value_iPad_iPhone.pdf).

Krugman, Paul (1995), 'Growing World Trade: Causes and Consequences,' *Brookings Papers on Economic Activity*, Vol. 25th Anniversary issue, No. 1, pp. 327-377.

Marshall, Alfred (1890/1920), *Principles of Economics. An introductory volume*, London: MacMillan and Co.

Motta Veiga, Pedro da and Sanda Polónia Rios (2010), Natural resource-based value chains and the upgrading of companies and sectors in developing countries: the Brazilian Case, presented at the VIII Annual Conference of the Euro-Latin Study Network on Integration and Trade (ELSNIT), CEPII, Paris, France, 15-16 October, available at http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=35381170.

Monge-Ariño, Francisco (2011), "Costa Rica: Trade opening, FDI attraction and global production sharing", in *Staff Working Paper ERSD* 2011-09, available at http://www.wto.org/english/res_e/reser_e/ersd201109_e.pdf.

Mussa, Luciano and Carlos Eduardo Carvalho (2007), "O desempenho exportador do Chile: um debate en andamento", Cadernos PROLAMUS/USP, Vol. 6, N. 1, pp 211-258.

Nakano, Tsutomu (2004), 'Industries in a Large-Scale Industrial District: A Component Analysis,' *University of Michigan-Flint School of Management Working Paper Series*, No. 2004-03, May.

---------- and Douglas R. White (2006), 'The Large-Scale Network of a Tokyo Industrial District; Small-World, Scale-Free, or Depth Hierarchy,' *Centre on Organizational Innovation, Columbia University, Working Papers Series*, June, available at http://www.coi.columbia.edu/pdf/nakano_white_lsn.pdf.

Nadvi, Khalid (1995, October), Industrial Clusters and Networks: Case Studies of SME Growth and Innovation, available at http://www.unido.org/fileadmin/import/userfiles/puffk/nadvi.pd).

Noronha, Eduardo Garuttiand Lenita Maria Turchi (2002), 'Cooperação e Conflito: Estudo de Caso do Complexo Coureiro-Calçadista No Brasil,' *IPEA Texto para Discussão*, No. 861, March, available at http://getinternet.ipea.gov.br/pub/td/2002/td_0861.pdf).

North, Douglass C. (1990), *Institutions, Institutional Change and Economic Performance* (Cambrigde: Cambridge University Press).

---------- (2005), *Understanding the Process of Economic Change* (Princeton, NJ: Princeton University Press).

Ottati, Gabi Dei (2000), 'Exit, Voice, and Loyalty in the Industrial District: The Case of Prato,' *ESRC Centre for Business Research, University of Cambridge Working Paper*, No. 175, September.

Pietrobelli, Carlo and Roberta Rabellotti (editors) (2006), *Upgrading to Compete. Global Value Chains, Clusters, and SMEs in Latin America.* Cambridge, Massachusetts. Harvard University Press, available at http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=1586023.

----------, Roberta Rabellotti and Elisa Giuiliani (2006) "Upgrading in global value chains: lessons from Latin American clusters", in Carlo Pietrobelli and Roberta Rabellotti eds. *Upgrading to Compete. Global Value Chains, Clusters, and SMEs in Latin America, pp*. 251-298.

Pinto, Anibal (1970), "Naturaleza e implicaciones de la 'heterogeneidad estructural' de la América Latina", *El Trimestre Económico*, Vol. 37, N. 145, January-March.

Porter, Michael (1985), *Competitive Advantage. Creating and Sustaining Superior Performance*, New York: The Free Press.

----------(2008), *On Competition. Updated and Expanded Edition*, Boston: Harvard Business Review Press.

Pozas, María de los Ángeles (2010), 'El Contexto de la Desigualdad Internacional y el Problema del Desarrollo', in Fernando Cortés and Orlandina de Oliveira (Ed.), *Los Grandes Problemas de México, Vol. V, Desigualdad Social* (Mexico, D.F.: El Colegio de Mexico), pp. 29-60, available at http://2010.colmex.mx/16tomos/V.pdf.

Prochnik, Victor (editor) (2010), *La Inserción de América Latina en las Cadenas Globales de Valor* (Buenos Aires, Argentina: Red Mercosur).

SELA (2011), El Sistema Multilateral de Comercio: La Bicicleta Puede Pararse? Los Retos del Comercio para el Desarrollo de América Latina y el Caribe, Document presented at the XXXVII Regular Meeting of the Latin American Council, Caracas, Venezuela, 19-21 October 2011 (SP/CL/XXXVII Di No 26-11), available at http://www.sela.org/attach/258/default/Di_No_26-Sistema_multilateral_La_Bicicleta_puede_pararse.pdf).

Sforzi, Fabio (2008*),* 'Unas Realidades Ignoradas: De Marshall a Becattini'*, Colección Mediterraneo Economico, No. 13,* available at http://www.fundacioncajamar.es/mediterraneo/revista/me1302.pdf).

Storper, Michael (2008), The Economics of Context, Location, and Trade: Another Great Transformation? available at http://www.cso.edu/upload/pdf_actualites/storper1.pdf).

UNCTAD (United Nations Conference on Trade and Development) (2001), *Growing Micro and Small Enterprises in LDCs. The "Missing Middle" in LDCs: Why Micro and Small Enterprises are not growing* (Geneva: UNCTAD), available at http://www.unctad.org).

---------- (2010a), Creating Business Linkages: A Policy Perspective (Geneva: UNCTAD), available at http://www.unctad.org/en/docs/diaeed20091_en.pdf).

---------- (2010b), *Integrating Developing Countries' SMEs into Global Value Chains,* available at *http://www.unctad.org/en/docs/diaeed20095_en.pdf.*

UNIDO (United Nations Industrial Development Organization) (2004), *Partnerships for Small Enterprise Development* (New York: UNIDO), available at http://www.unido.org).

USITC (United States International Trade Commission) (2010a), *Small and Medium-Sized Enterprises: U.S. and EU Export Activities, and Barriers and Opportunities Experienced by U.S. Firms* (Washington, D.C.: USITC), available at http://www.usitc.gov/publications/332/pub4169.pdf.

Ventura-Dias, Vivianne (1994), As empresas brasileiras: internacionalização e ajuste à globalização dos mercados, documento do Escritório da CEPAL em Brasília (LC/BRS/R.44/Ver.1).

---------- (2003), June), What Can We Say About Trade and Growth When Trade Becomes a Complex System? In Serie Comercio Internacional N. 27, Santiago de Chile: ECLAC, available at http://www.eclac.org/comercio.

----------(2011) "A service-based economy: Where do we stand? Notes on structural change and economic development", LATN WP 139, available at http://www.latn.org.ar/wp-content/uploads/2011/10/WP_139_Servicios.pdf.

---------- and José Durán Lima (2001, December), Production Sharing in Latin American Trade: A Research Note, in Serie Comercio Internacional, N. 22, Santiago de Chile: ECLAC, available at http://www.eclac.org/publications.

Yamawaki, Hideki (2001), 'The Evolution and Structure of Industrial Clusters in Japan', *World Bank Institute, Stock*, No. 37183.

Zeitlin, Jonathan (2008), 'Industrial Districts and Regional Clusters', in Geoffrey Jones and Jonathan Zeitlin (Ed.), *The Oxford Handbook of Business His*tory (Oxford: Oxford University Press), pp. 219-243.

Zuñiga-Arias, Guillermo (2011), 'El Desarrollo de Cadenas de Valor Agroindustriales en Costa Rica, El Salvador y Nicaragua. El Caso de Estudio de la Agroindustria Láctea', *Serie Estudios y Perspectivas*, No. 126, May, ECLAC-Mexico, available at http://www.eclac.cl/publicaciones/xml/0/43590/2011-020-Cadenas-de-valor-ind.-lactea-Serie-126-L996-Rev.1.pdf.