

Trade, investment and fragmentation of the global market: Is Latin America lagging behind?

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Summary

This document has the purpose of contributing to the analysis of trends and prospects of Latin America's insertion into the new global scenario, characterized by a growing integration of national economies – through trade, investment, finance, etc. – and the increasing internationalization of the so-called global value chains (GVCs).

The opportunities and challenges presented by this GVC phenomenon are different and their effects not always homogeneous. In this paper, we study their impact on the developing economies, focusing particularly on Latin America. The insertion into the GVCs may help diversify exports, create new jobs and acquire new technological capabilities in keeping with the best international practices, which will strengthen the competitiveness of lagging countries. However, distributive effects and spillovers to domestic economies – and therefore, in more general terms – their impact on development – are less clear.

Admitting that we are speaking of a heterogeneous reality, the present situation proves to be “unsatisfactory”, taking into account that some countries play a minor role in the GVCs, while others, more inserted into them, show, in general terms, relatively small spillovers. Factors behind these trends are evaluated and some political lessons that help improve the region's positioning in today's global scenario are drawn.

The document is structured as follows: in the second section, we present information on trade and FDI worldwide trends, particularly in terms of their relation to the GVC phenomenon. Also, we briefly introduce a conceptual framework to analyze such trends and its impacts. Section III discusses available data on the way Latin America is inserted into worldwide trends of trade and investment and the

participation (or not) of the continent in international production systems. In section IV we look into the reasons for the region's weak role in GVCs and of the scarce positive impacts resulting from its present integration manner into the trends of trade and FDI. In section V, we present the main conclusion and political lessons.

I. Introduction

In the past three years, Latin America has exhibited a strong growth performance, supported both by a favorable international context – including the high prices of its main export commodities –, cautious macroeconomic management, particularly in the fiscal front, and an economic policy aiming at maintaining a high foreign exchange rate, which has resulted in a dynamic export performance.

Despite these favorable data, and the mostly positive forecast that the region will continue to show good macroeconomic performance, in the opinion of many analysts – among whom we find ourselves – it is vital to take advantage of this “fair-weather” period in order to face the necessary structural transformations to position the region in a growth path sustainable in the course of time, one which allows, additionally, solving the serious social problems affecting it for decades and which have become worse in the past few years.

Among the issues included in this transformation agenda, that of how to integrate the countries of the region into the world economy is one of the most important. This document has the purpose of contributing to the analysis of this phenomenon through the examination of the trends and prospects of Latin American’s insertion into the new global scenario characterized by a growing integration of national economies – through trade, investment, finance, etc. – and the increasing internationalization of the so-called global value chains (GVC).

“Insufficient” integration of the continent into the world economy has usually been to blame for Latin America’s problems. No doubt in the past two decades most countries in the region took important steps towards the opening of their economies, due to which,

they are presently far more open to trade and capital flows than at any other time after the 1930 crisis.

The results of this higher integration are, however, debatable. A key point in this sense is that several recent works show, on arguments that “heterodox” economists (such as the structuralist ones) have been pointing out for some time now, that the way countries become part of the world economy is a determining factor for their long-term development possibilities. While the arguments are not new, the fact that they are now tested through econometric techniques is, well- or badly-grounded, a crucial element for professional economists to take them more seriously.

In the field of trade, recent research shows that different specialization patterns have different impacts on growth rate (for example, Hausmann et al, 2005). Regarding foreign direct investment (FDI), meanwhile, three renowned experts point out that “evidence... shows that the search for a “universal outcome” of the DFI effects on a developing country is simply in the wrong path. FDI may have dramatically different effects, both positive and negative ones” (Moran, Graham and Blomstrom, 2005).

Consequently, when asking ourselves, as the title of this paper does, whether Latin America is “lagging behind” in the new global scenario, we should not only look at export growth rates, balance of trade results or the degree to which FDI is drawn into the region, but, primarily, at the nature of trade and investment flows, as well as the prevailing domestic conditions in the region’s countries, which are key determining factors for the integration impact on the economic and social development prospects.

In order to properly analyze these phenomena, it is precise to understand the changes the world economy has been going through in the past few decades. While the transnationalization of the production system in different and distant parts of the planet dates back to the beginnings of the Industrial Revolution, and even before, only after the consolidation of the so-called “globalization” does it take on the complexity and size that identify it at present. This phenomenon has received different names in literature: «disintegration of production» (Feenstra, 1998), «global fragmentation» (Lall et al, 2004), «international systems of integrated production» (Katz et al, 2001; UNCTAD, 2002), «supply chains» (Gereffi, 1999), «global production networks» (Ernst et al, 2002), «global commodity chains» (Gereffi and Korzeniewicz, 1994) or «global value chains» (Gereffi et al, 2001).¹

The driving forces behind the growing spread and scope of GVCs involve the advance of new information and communication technologies (ICTs), which help reduce the costs of the coordination, logistics and monitoring of operations carried out in a geographically decentralized way, the decrease in transportation costs – evidenced not only in the field of physical goods, but also in the case of intangible goods² and the opening of trade and FDI – accompanied by the proliferation of different ways of binational or multinational agreements, ranging from regional integration processes to investment treaties. All these factors make it easier to redefine the global-scale strategies of the main GVC players: the major transnational companies (TNC).

The opportunities and challenges presented by this GVC phenomenon are different and their effects not always homogenous. In this paper, we study their impact on the developing economies, focusing particularly on Latin America. The insertion into the GVCs may help diversify exports, create new jobs and acquire technological capabilities in keeping with the best international practices, which will strengthen the competitiveness of lagging countries. However, distributive effects and spillovers to domestic economies – and therefore, in more general terms, their impact on development – are less clear.

¹ In this work, we will mainly use the name “global value chains (GVC)” though we will also use the others as synonyms.

² We should take into account that the dramatic fall in international communication costs makes it possible to deliver remotely services that in the past required physical closeness (the case of the back-office outsourcing – accounting, salary calculations, etc). – is a case in point.

This document has the purpose of analyzing Latin America's insertion into the international economy and into the GVC phenomenon. Admitting that we are speaking of a heterogeneous reality, and expressing now our conclusions, we will say that the current situation is "unsatisfactory", taking into consideration that some countries play a minor role in the GVCs while others, more inserted into them, show relatively small spillovers. We will try, therefore, to analyze the factors behind these trends and draw some political lessons that might help improve the region's positioning in today's global scenario.

The document is structured as follows. In the Second section, we present information on trade and FDI worldwide trends, particularly in terms of their relation to the GVC phenomenon. Also, we briefly introduce a conceptual framework to analyze such trends and their impacts. Section III discusses available data on the way Latin America is inserted into worldwide trends in trade and investment and the participation (or not) of the continent in international production systems. In Section IV we look into the reasons for the region's minor role in GVCs and of the scarce positive impacts from its present integration way into trade and FDI trends. In Section V, we present the main conclusion and political lessons.

II. Globalization of Production: trends, structural implications and analytical framework

The idea of value chains is a very simple concept which refers to the sequence of different activities involved in the manufacturing or delivery of goods or services, from the conception of the product and the successive stages of its manufacturing to its marketing. Rarely does a company or production unit cover all these activities by itself. The peculiar thing of the new scenario is that such activities tend to be carried out by units geographically spread throughout the world.

As we said before, the phenomenon of the growing fragmentation and internationalization of production through GVCs has been historically related to the increasing globalization taking place in the past few decades. In turn, this phenomenon also shows important changes -not only qualitative but also and mostly quantitative ones – in the structure of international trade and FDI. In this section we deal with the latter, and then we describe the transformations in international trade. Lastly, we present a conceptual framework that helps analyze the impact of globalization and the formation of GVCs on developing countries.

1. Transformations in the FDI pattern and transnational corporation's strategies

Since the early 1980's, the world volume of FDI has surpassed international trade, which, in turn, increased more than GDP (graph 1).

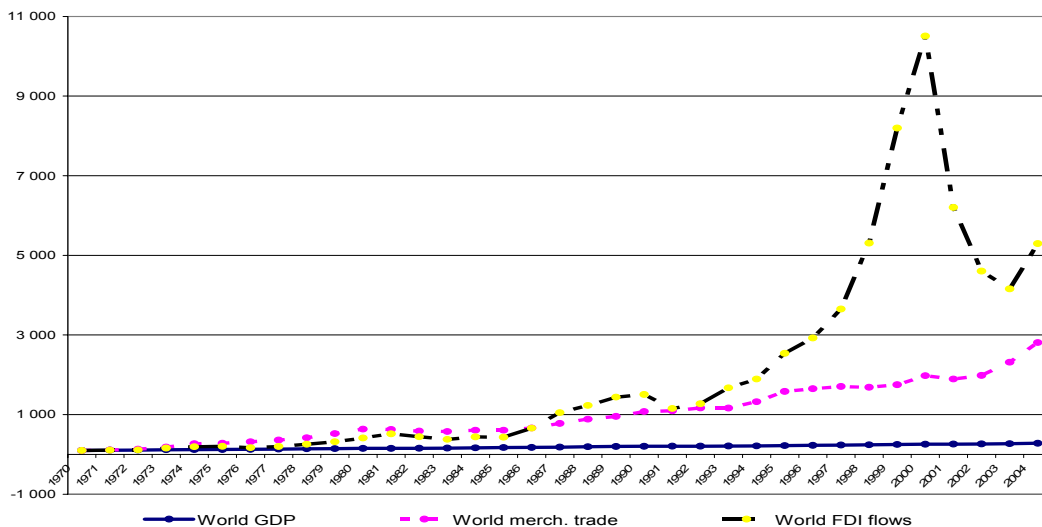
Such process gained particular importance during the 1990's – which came to be known as the FDI boom – and while such figures are currently much lower than the record reached in 2000 – higher than US\$1,400,000 million,³ investment flows are still clearly higher than those in last few decades.

Taking into account all the above, no wonder that the weight of TNCs in the world economy has increased strongly in the past few years. In the early 1990's, corporations with at least 170,000 foreign affiliates were estimated to be approximately 37,000; in 2004, there were around 70,000 TNCs and 690,000 foreign affiliates, almost half of which were located in developing countries (DC) (UNCTAD, 2005).

We should not find surprising either that these companies concentrate a substantial part of the world trade. According to UNCTAD's estimates, since the early 1990's, TNCs have accounted for 2/3 of global trade – including both intra-company operations and third-party companies – and almost 1/3 of such trade is based on intra-company transactions (UNCTAD, 2002).

TNCs play, additionally, a key role in the generation of new technologies. In 2002, almost all 700 companies with the most investment in R&D in the world – of which 80% are from just five countries: the US, Japan, England, Germany and France – were TNCs and represented 46% of all the global investment in R&D (UNCTAD, 2005).⁴

Graph 1
EVOLUTION OF GDP, TRADE AND WORLD FDI FLOWS, 1970-2004
(Index , 1970=100)



Source: own based on data from UNCTAD and WTO, according to graph 2.1 by Milberg (2004).

The weight of developing countries as a destination of FDI flows went from less than 20% in the second half of the 1980's to almost 36% between 2003 and 2005. These flows, however, are strongly concentrated: ten countries⁵ hold more than 70% of the FDI coming into emerging markets

³ Between 1991 and 1996 world FDI flows increased from US\$ 158 000 million to US\$ 377 000 million per year (almost a 140% increase in 5 years). In 2000, FDI reached US\$ 1 390 000 million (an approximately 270% increase in four years) –values in current dollars- (UNCTAD data).

⁴ Furthermore, investments made by some of the biggest TNCs greatly surpass those of several companies, for example, four TNCs (Ford Motor, Pfizer, Daimler Chrysler and Siemens) in 2003 invested in R&D some US\$ 6,000 million. By way of comparison, only China, Korea, Taiwan and Brazil showed figures close to or higher than US\$ 5,000 million in 2002 in the group of developing countries

⁵ China, Honk Kong, Mexico, Singapore, Brazil, the United Arab Emirates, Korea, India, Chile and Colombia.

(not taking into account that landing in fiscal havens), and only two –China and Honk Kong– hold nearly 40% of the total (estimate based on UNCTAD, 2006).

Along with the notable growth of FDI flows in recent years, we can also see qualitative changes in the factors that lead TNCs' (which are the agents that materialize the gross of FDI worldwide) investment decisions, as well as in the internationalization strategies that they adopt. In this sense, Dunning (1994) identifies four kinds of strategies: i) *resource seeking*, aimed at exploiting natural resources or non-skilled labor with export purposes; ii) *market-seeking*, aimed at the domestic market of the destination country; iii) *efficiency-seeking*, in which the purpose is to rationalize production in order to obtain economies of specialization and scope, and iv) *strategic asset-seeking*, which aims at keeping or creating new sources of competitiveness through the access to strategic assets – for example, innovation capabilities, organizational structures, etc.

The resource and market seeking strategies were the most common for almost 100 years, since FDI began to be an important phenomenon in the world economy in the late 19th century. This began to change in the last decades, when, along with higher competition through innovation and product differentiation, the convergence of consumption national patterns, a greater opening to trade and investment flows, the advance of ICTs, and the reduction in transportation and communication costs, more complex strategies – of the type of efficiency seeking and strategic asset-seeking ones – emerge.

The decision on FDI location includes, consequently, new determining factors. For example, now factors such as labor force education and training level, the adaptation and physical and technical infrastructure costs as well as the degree of development of local capabilities at a technological level take on higher importance, which Dunning (1994) groups under the name of “created assets”, to highlight the contrast with the “natural” ones.

In turn, TNC's strategic and objective transformations caused changes in intra-company patterns. Thus, from the stand-alone affiliates, typical in the 1950's and 1960's – when market-seeking strategies had the upper hand, new organizational forms started to take place, beginning with “simple integration” methodologies in which the affiliate – or eventually an independent company – specialized in some stages of the value chain – usually labor-intensive ones. This movement was related to the search, by numerous TNCs, for lower manufacturing costs, relocating some segments of the production chain in countries with low salaries, process primarily involving some developing Asian nations – where special export zones were installed – and, in Latin America, Mexico – in this case – through the so-called “*maquila*”. This transformation is, by and large, the antecedent of today's GVCs.

The following step was the emergence of “complex integration” patterns, in which TNCs transform their affiliates – and/or independent subcontractors – into parts of distribution and production networks articulated regionally or globally. Thus, the value chain is split into different functions – packaging, finances, R&D, marketing, etc. – which are located where they can be developed most efficiently to integrate a whole.

When efficiency-seeking strategies combined with “simple” and “complex” integration forms are established, FDI and trade are no substitutes but complements,⁶ and this is why, unlike what used to happen with market-seeking strategies, the protection of domestic markets no longer play a positive role in the attraction of FDI, since the fragmentation of production requires open economies.

The display of off-shore strategies (remote delivery of corporate services) is a central part of the described processes. In fact, the service sector holds a growing presence in the FDI composition

⁶ Feenstra (1998) adequately summarizes this situation when drawing attention to the connection between the “trade integration” and the “disintegration of production”.

– the weight of such sector increased from a fourth of the world stock in the early 1960's to less than half in the 1990's and to 60% in 2002 (UNCTAD, 2004). Such increase is due to different causes: i) the previous lag the sector showed in terms of transnationalization; ii) the growing weight of services in GDP in most countries; iii) the deregulation and privatization processes allowed foreign investors to gain access to previously limited sectors; and iv) the most important item for our work, the technological changes that made it easier to develop processes for remote services (UNCTAD, 2004). This last phenomenon is partly reflected in the increased weight of the “business services” line in total services FDI flows, from 26% to 36% between 1989-1991 and 2002-2004 (UNCTAD, 2006).

But one of the most relevant facts in the last decades has been global strategies dissemination; TNCs do not only resort to FDI and intra-company trade, but also to the outsourcing of their activities. In fact, recent trends show that most FDI is growingly concentrated in their “basic competences”, which are generally associated to activities like R&D and design, the management of brands and sales channels or their own ability to organize and connect an increasing number of agents in global chains or networks in integrated systems. Meanwhile, production activities or labor-intensive services, the assembling of not very complex products or the logistics of production distribution are increasingly outsourced to companies that operate in low-cost labor areas (UNCTAD, 2002).

Since the main incentive of this strategy is decreased costs, the strong increase in corporate gains recorded in the past years⁷ is evidence in favor of its success. Additionally, outsourcing has other advantages for TNCs, including reduction in investment costs, higher flexibility – is easier to cancel a contract than closing off a plant -, minimization of operating risks, etc.

As regards subcontractors, the effects are ambiguous. While they gain access to markets and technologies otherwise difficult for them to reach, the costs associated to their role as “shock-absorbers” of the cycle of the large companies, and those resulting from operating, more often than not, in oligopsonic conditions can help offset such advantages. Nor is it clear that subcontractors, who initially offer basically low costs and reliability in meeting production plans, might «work their way up» through the value chain as far as to reach higher responsibilities and, simultaneously, go through a learning process that allows them, eventually, to play independently in international markets (more about this in further sections).

Lastly, it is interesting to mention that while R&D tasks are usually the last to be internationalized within TNC's value chains, in the past few years a decentralization trend of these activities towards some developing countries, especially in Asia, has been observed (graph 2).⁸

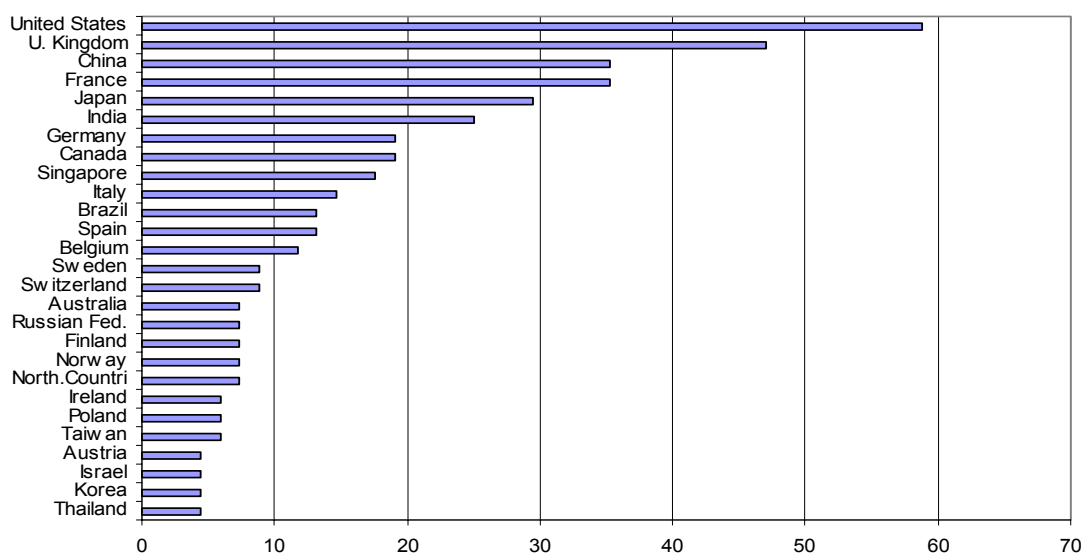
The main factors behind the trend towards the decentralization are linked to the search for lower costs, the advance of ICTs – which allow disseminating information more cheaply and faster – and the “modularization” of R&D projects. Meanwhile, the increased weight of developing countries as appealing locations for this type of activities might be essentially based on the existence of large domestic markets and/or the availability of qualified resources at a low cost, as well as political factors, from improvements in national innovation systems to specific incentives for TNCs to develop R&D in FDI destination countries (UNCTAD, 2005; Ramos and Anlló, 2005).⁹

⁷ In 2004 post-tax corporate gains in the US reached their highest level in 75 years. The respective shares in the area of the euro and Japan have also been the highest in the past 25 years and it is estimated that, taking the G-7 economies as a whole, the participation of the profits has never been any higher than today. (*The Economist*, 2-10-2005).

⁸ On the basis of the information from 30 countries that accounted for 99% of the private investment in R&D in 2002, it is observed that the investment of TNCs in R&D in developing countries more than doubled between 1993 and 2002 – from US\$ 29 00 to US\$ 67 00 million-, while the growth of global investment in R&D was approximately 49% in the same period. Taking exclusively the case of US subsidiaries, investment in R&D made in developing countries increased from 7.6% in 1994 to 13.5% of the total figures in 2002 -10% in Asian countries and 3.2% in Latin America and the Caribbean - (UNCTAD, 2005).

⁹ The internationalization of R&D activities is not only carried out with the corporation's own affiliates, but also, albeit to a much lesser degree, through contracts with third parties. Among the determining factors of the decision between “doing or purchasing”

Graph 2
DESCENTRALIZATION OF R&D ACTIVITIES BY TNC, 2004
*(In percentages)**



Source: UNCTAD (2005).

Note: * Based on a survey answered by 68 TNCs within the group of the 300 largest TNCs in terms of investment in R&D. The percentages refer to the number of companies, over the total surveyed, that mentioned carrying R&D activities in each of the countries listed. The countries mentioned with two answers are: the Czech Republic, Hungary, Indonesia, Malaysia, Mexico and Portugal. With just one answer are: Argentina, Bulgaria, Denmark, Estonia, Greece, Hong Kong, Morocco, the Philippines, Saudi Arabia, Slovakia, South Africa, Turkey and Vietnam.

2. Trade of goods and services: recent trends

We mentioned before that, in parallel with what happened with the FDI, there had also been qualitative changes in international trade. One such change is the decreasing weight of primary and resource-based products in global exports next to those more technology-based.

Between 1980-2000, the percentage of resource resource-based exports in the overall trade decreased by five points, while high-tech products were more dynamic, increasing by 14 points their participation, from 9% to 23% in 2000 (see graph 3). The average growth trade of resource-based products was from 3% in the 1980's to 5% in the 1990's, low- and medium-tech products diminished by one their growth ratio (from 7% to 6%), while high-tech products grew at a constant rate of 11%.¹⁰

R&D are the tacit nature of the knowledge, the necessary coordination to develop this type of tasks and the strategic importance of R&D for the company – among others supporting the decision of “doing” R&D internally. Those tending to support the outsourcing of R&D, in turn, include the growing degree of production fragmentation, the need for more and more specialized equipment and abilities – which becomes increasingly difficult for the company to develop R&D at every stage of production –, the growing multidisciplinary and multi-technological nature of innovation, the high fixed costs that such an activity implies – especially when it requires intensive-capital infrastructure and the need to create innovation in the shortest time possible, among others (UNCTAD, 2005).

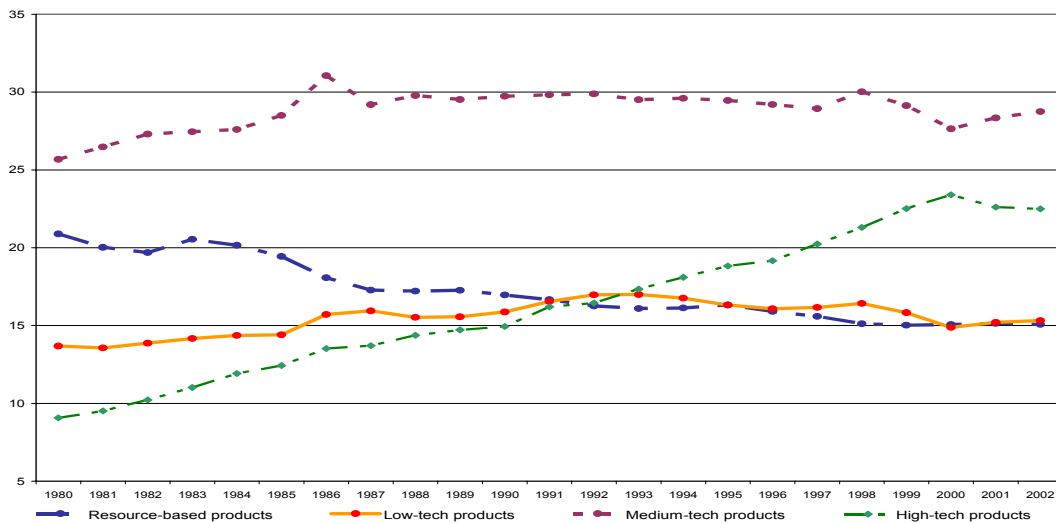
¹⁰ These categories are based on the classification suggested by UNCTAD, which divides sectors into four groups according to the technological and manufacturing intensity of its production. Following UNIDO (2005), resource-based products include food, tobacco, hide and oil refining, among others. Low-tech products include textiles, hide manufacturing, simple plastics and furniture, among others. They are characterized by low investment in R&D, low skill-labor requirements and low importance in economies of scale. Medium-tech products are industrial goods such as automobiles, machinery, simple electrical products and appliances and industrial chemicals; while they use a complex technology, the investment in R&D is moderate, and they usually require large scales and capital. High-tech products include complex electronic goods and appliances, precision instruments, fine chemicals, aeronautical equipment, etc.; such industries require high investment in R&D and advanced technological infrastructure. Nevertheless, given that such classifications are based on the dynamic of the developed countries, when analyzing developing countries' exports structure it

Also, as graph 4 shows, between 1980 and 2000, developing countries exhibited a technology-intensive export growth rate, higher than that of central countries. However, this situation is not homogenous in the whole of the latter group and it is not surprising to find Asian countries leading this growth in every product category.

On the other hand, in 2000, the top ten exporters in developing economies accounted for almost 4/5 of total manufacturing exports of this group of countries – and, additionally, the concentration pattern has changed: in 1985 the concentration was higher in low-tech products while in 2000 it was in high-tech ones, which suggests that entry barriers increased in the latter category (UNCTAD, 2002).

It is necessary to take into consideration, nevertheless, that the way in which the various developing countries participate in high-tech goods production shows significant differences. In several countries such production is primarily based on low added value assembling activities, attracted by low salaries, with scarce or non-existent links with local suppliers and few possibilities of disseminating knowledge (for example, the Philippines or Mexico). On the other hand, in some East Asian countries (Korea, Taiwan, Singapore) such activity – led by local companies in Korea and Taiwan and by TNC's affiliates in Singapore – gave rise to significant local chains and the emergence of a strong domestic innovation activity, in which public policies play a key role.¹¹

Graph 3
PARTICIPATION OF TOTAL GLOBAL EXPORTS BY GROUPS IN TERMS OF TECHNOLOGICAL INTENSITY, 1980-2002
(In percentages)



Source: own based on data from UNCTAD (COMTRADE).

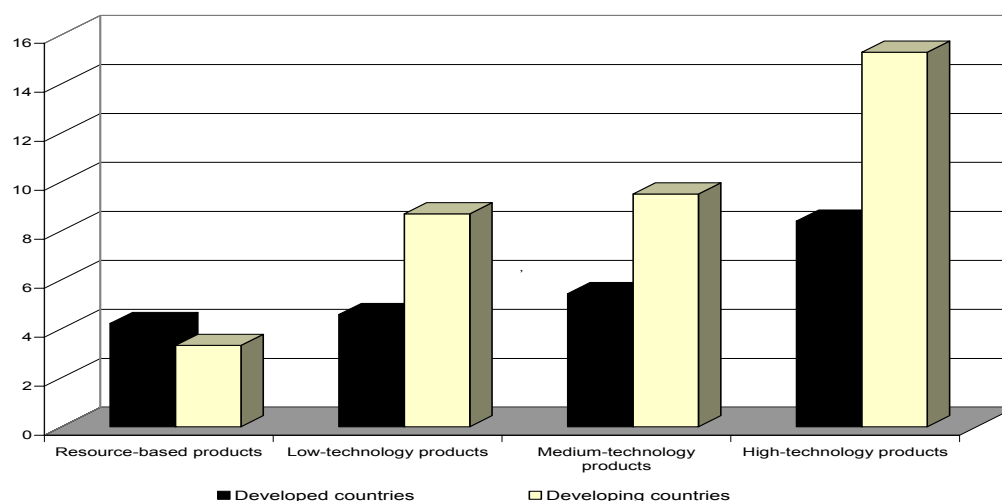
To which extent changes in trade patterns have been associated to the notable expansion of FDI? While, as mentioned before, intra-company trade has a strong weight worldwide, its participation in the total trade remained relatively constant in the past few decades. For example in the case of US affiliates, intra-company trade remained at around 35% of total exports and 42% of

should not be assumed that the latter shows a similar activity (this difference is explained when we analyze the case of the Mexican *maquila*, for example).

¹¹ Here we include measures such as: i) offering incentives to foreign companies to perform R&D activities and cooperate with local universities and research centers; ii) promoting technical and scientific training; iii) stimulating high levels of national integration by means of suppliers development; iv) favouring innovative efforts (including reverse engineering) by local manufacturers (see Lall, 2000; Hobday, 2000).

imports in that country for 20 years (1977-1998). A similar situation is present in Japan and Sweden where intra-company exports in the early 1980's represented 23% and 38% of total exports respectively, while by the early 1990's such percentage had increased by just two points for Japan and did not show any change in Sweden (Milberg, 2004).

Graph 4
AVERAGE ANNUAL GROWTH RATE OF WORLD EXPORTS
BY GROUPS IN TERMS OF TECHNOLOGICAL INTENSITY, 1980-2002
(In percentages)



Source: own based on data from UNCTAD (COMTRADE).

In turn, as previously pointed out, a growing part of trade falls into international integrated production systems. While there are no precise indicators to measure the importance of GVC-based trade, the evolution of exports of spare parts and components (SP&C) *vis à vis* that of end goods is used as an estimate to measure the degree of production fragmentation. Although the available information has certain limitations¹², in general terms we can see a growth rate higher in SP&C than in end products, which might confirm the hypothesis of the trend towards a higher fragmentation (Feenstra, 1998; UNCTAD, 2002; Milberg, 2004).¹³ Additionally, if we consider this trend along with the idea of some “stagnation” in intra-company trade previously mentioned, it is obvious TNC’s progressive preference for outsourcing strategies, as it was mentioned before.

Despite the lack of data allowing us to know the precise size of this phenomenon sector-wise, available evidence suggests that production fragmentation is particularly spread in activities such as textile, clothing, electronic appliances, vehicles and light consumer industries such as toys- (Milberg, 2004).

¹² The shortage of empirical evidence to evaluate the size of production fragmentation is mainly due to the difficulty in finding an exact R&D measure, since it does not necessarily coincide with the category of “spare parts and accessories” of the SITNC classification for every industry. On the other hand, intracompany trade indicators or those of TNC’s trade, which are free from measuring difficulties either, are much broader, since they may include products that are not part of a global production network (or the other way around). Additionally, in certain cases the fragmentation does not mean the decentralization of production in parts and components, but in complete products (as clothing), since what happens in this case is that the companies leading the chain retain non-manufacturing activities – design, marketing, etc. When the fragmentation includes services, meanwhile, the shortage of adequate statistics hinders capturing the size of the phenomenon. Lastly, it remains to analyze total exports in some activities known to be highly fragmented – which implies, naturally, some circulation problem.

¹³ While the measuring problems mentioned above lead us to take these data very cautiously, it is worth mentioning that, according to Jones (2006), the world SP&C trade grew at a pace of 9.1% per annum in the 1990’s, as opposed to 6.5% in total trade.

But the complexity of the GVCs' phenomenon goes beyond the realm of goods trade. We already saw, for example, how TNCs decentralize even activities so strategic to their operations as R&D. This draws our attention to the circulation of intangibles in GVCs and, therefore, to service trade.

Services have been gaining importance in the world trade structure in the past few years. They accounted for 16% to 20% of total trade between 1980 and 2004, exceeding the agricultural sector (7% in 2004) and fuels and mining (12%) – estimates based on available statistics in UNCTAD. Meanwhile, prospects indicate that the participation of services will continue to grow thanks to the technological and regulatory changes and to the new strategies observed in terms of global production fragmentation.

What is remarkable is that, in addition to the traditional tradable services (tourism, transportation, insurance, etc.), in the past few decades ICTs had allowed for the remote delivery of a higher variety of services (accounting, finance, logistics, IT-management, etc.) -*Information Technology Enabled Services* (ITES),¹⁴ which has been growing strongly in the past few years since more and more companies are installing offshore centers with the purpose of having ITES (Bastos Tigre y Marques, 2006a; OECD, 2006).¹⁵

The last data on FDI projects oriented to the export of this kind of services show that during 2002-2003 there were 1,849 projects, out of which 513 were call centers, 632 investments in IT-related services (for example, software development, applications testing, content development, products optimization, etc.), 565 were projects to eradicate headquarters and regional coordination centers¹⁶ and the rest investments in shared service centers – or back-offices – (for example, the outsourcing of accounting handling, and the management of customers and salary systems as well as the payment to suppliers and data processing, the outsourcing of the IT area, etc.) (UNCTAD 2004).

As shown in Tables 1 and A1 (see appendix), besides the OECD countries –where the economies leading the investment flows in the sector are the United Kingdom and Ireland –, the region of the developing world with the highest share in projects is Asia. In this region, India and China are, by far, the most sought-after destinations, followed by Singapore, Malaysia and the Philippines.

For the call centers and the shared services centers, the low costs, followed by the availability of skilled labor and languages command have the most drawing power. In contrast, the projects oriented to the delivery of TI services and the installation of regional headquarters are mainly based on the market growth prospects and the closeness to customers – the low costs rank fourth in the case of services and do not show in the motivation ranking in headquarters (UNCTAD, 2004). This gives an idea about not only the investors' motivations, but also about the complexity of the tasks developed in each case – and, therefore, the strategic role played in each location within the chain value. In general, nevertheless, off-shoring might be primarily taking place in jobs that do not require very sophisticated skills (OECD, 2006).

Summing up, production, trade, innovation and foreign investment patterns worldwide have changed significantly in the past few years. This has been encouraged, among other factors, by ICT's progress, the adoption of policies favoring the opening of trade and capital flows, and the growing importance large TNCs gained, whose strategies strongly impact the make-up of the international scenario. The emergence of the GVC phenomenon has been a crucial component in these transformations.

¹⁴ Some estimates point out that service offshoring towards emerging markets might grow at a 30% rate between 2003 and 2008, which might imply to increase from 3% to 10% *vis à vis* the world's total service trade (McKinsey Global Institute, 2005).

¹⁵ Following Bastos Tigre and Marques (2006a) outsourcing might be divided into two categories that suppose different degrees of complexity: *Information Technology Outsourcing* (ITO) and *Business Process Outsourcing* (BPO). In the former, the supplying company renders a punctual service (management or maintenance of applications or systems, etc.). In the latter, the contract states that the supplier assumes the responsibility of providing a business process (for example accounting, finances, etc.).

¹⁶ In fact, this type of operations precedes the offshoring boom, but UNCTAD groups them with the other methodologies due to the fact that their functions usually focus on service exports.

Table 1

EXPORT-ORIENTED FDI PROJECTS IN THE AREA OF SERVICES, BY REGION, 2002-2003

	<i>Call Centres</i> ^a	<i>Shared Service Centres</i> ^b	<i>IT Services</i> ^c	<i>Regional HQs</i> ^d	Total
Developed countries	54.4	34.5	46.4	60.0	51.9
Developing countries	45.6	65.5	53.6	40.0	48.1
Latin America and the Caribbean	5.7	3.6	3.5	1.8	3.6
Central and Eastern Europe	6.0	13.7	3.8	3.0	4.9
Asia	32.6	47.5	44.8	34.5	38.5
Africa	1.4	0.7	1.6	0.7	1.2
TOTAL	100.0	100.0	100.0	100.0	100.0

Source: UNCTAD (2004).

^a includes back-office and help desk services, claims management, technical support, post-sale services, information services, etc.; ^b includes data, accounting and administrative processing, customer and supplier, logistics, IT outsourcing, quality control, etc.; ^c includes software development, application testing, content development, engineering and design and product optimization; ^d Coordination centers and regional headquarters.

Before taking a look at the way Latin America has entered this new scenario, it is important to analyze the conceptual framework that allows us to evaluate the phenomena under study from the broadest perspective of the economic and social development goals that the countries in the region must follow. This is explained in the following point.

3. Conceptual framework

In the introduction we stated that rather than analyzing the quantitative aspects of the integration into the world economy, it is crucial to analyze the way in which the different countries integrate, since this is on which the sign and magnitude of the integration effects on the national economies' development process will depend.

It has been customary to think that FDI would generate a positive contribution to developing countries' growth, at least by means of two types of channels: i) **macroeconomic**: financing, lower volatility than through other channels, balance of payments; increased exports; improved productivity and efficiency of resources distribution; help to increase capital stock in destination nations; ii) **microeconomic**: introduction of new technologies into the destination country, close to the international border; positive spillovers – through human resources training, technology transfer, organizational practices and management capabilities and the introduction of higher competition in local markets – which should translate into higher productivity in national capital companies; access to foreign markets; «*crowding in*» effect – FDI might induce national companies, in order to compete under adequate conditions, to face that challenge with new investments. (World Bank, 1999).

Contemporary literature, however, and as was pointed out in our introduction, tends to be more skeptical about such benefits, suggesting that their materialization essentially rests on a series of conditions – having to do with the sort of FDI which is attracted and with the environment of the destination countries – which are not always present in developing countries.

In the field of macroeconomic impacts, for example, recent studies find that there is no causal relationship between FDI and growth (Carkovic and Levine, 2005), or that should it exist, is a two-way relationship – that is, from growth to FDI - (Choe, 2003; Chowdhury and Mavrotas, 2005) – or it depends on factors such as the development of financial markets (Alfaro et al, 2003) or the way

FDI enters –greenfield vs mergers and acquisitions- (Mencinger, 2003).¹⁷ Meanwhile, a study by Agosin and Mayer (2000) finds evidence of positive crowding in of FDI in Asia's domestic investment, but of crowding out in Latin America's case, which the authors attribute to higher screening in Asia than in Latin America regarding the sort of FDI and way it enters, as well as to a macroeconomic environment more favorable in Asia.

As to the microeconomic effects, while, in general, empirical studies find that FDI's direct impacts are positive (in terms of productivity, exports, etc.), the evidence on indirect impacts (that is, spillovers to local firms) is much more ambiguous. For example, the most recent studies, based on advanced econometric procedures, do not find any proof of positive impacts in terms of horizontal productivity spillovers (between companies of the same sector), especially in developing countries. Part of such literature tends to stress the fact that the magnitude and sign of the spillovers dramatically depends on the local companies' capabilities and/or the technological distance between them and the TNCs' affiliates (see Gorg and Greenaway, 2004 and Lipsey and Sjöholm, 2005 for summaries and critical stock-taking on this issue). In contrast, the studies by Javorcik (2004) and by Blalock and Gertler (2005) find that there are vertical positive spillovers from TNCs' affiliates to their local suppliers, which suggests that a crucial factor to determine FDI's impact is the degree of integration of TNCs' activities into the local economy.

Similar ideas may come up when the relation between trade and development is analyzed. Following ECLAC (2004), a higher export dynamism can generate the following positive effects: i) the acquisition of foreign currencies that allow to carry out the necessary exports for economic growth; ii) taking advantage of economies of scale and specialization; iii) externalities or links with other activities; iv) the reallocation of resources towards more productive activities and companies; and v) the learning that might result from the contact with the international economy and the competitiveness challenges exporters and suppliers face.

From this list we can infer that just the first of these impacts is, to a certain extent, independent of the commercial specialization pattern and the way the export activities are integrated (or not) into the rest of the economy.¹⁸

In fact, the prevailing approach in economic theory (in Heckscher-Ohlin's tradition) suggests that the prevalent specialization pattern (or the efficient one) is that of the comparative advantages determined by a country's level or resources, which might be that emerging from trade policies with no bias, in favor or against, certain lines.

However, for a long time arguments indicating that relations between specialization and growth are more complex have been suggested. Back in the 1950's, some economists like Raúl Prebisch (1950) or Hans Singer (1950), for example, stated that peripheral specialization in primary products had negative effects on their development potential due to, among other reasons, the deterioration of trade terms.

One of the factors due to which specializing in primary goods presented advantages was the low elasticity of the demand for such products.¹⁹ Also, labor division current at the time meant that developed countries could retain the benefits of technical progress as higher prices for their manufactured goods and/or higher salaries for industrial workers, while such progress in the case of

¹⁷ In fact, this paper shows a negative relationship between FDI and growth in transitional countries in Eastern Europe – finding that might be explained by the fact that most of FDI in such countries came as mergers and acquisitions.

¹⁸ We could even say that to reach the first objective, it is important to consider the degree of concentration/ diversification of a country's export structure, since a high concentration in external sales – be it at a sector level or that of destination countries – may be adverse, while exposes the export basket – and, consequently, the whole of the economy – to higher risks resulting from exogenous shocks that might affect such sectors or markets (this is particularly important when a country's exports are commodity-based, whose international prices are more volatile).

¹⁹ More recently, the importance of increasing the elasticity of the export good revenues as a means of overcoming the restriction to growth from the balance of trade in developing countries has been addressed through the so-called Thirlwall Law (Thirlwall, 1979; McCombie y Thirlwall, 1994).

basic products translated into lower prices (due to the differences in the organization patterns of goods and factors markets in each case). Here we can see some key issues for our analysis: increased international demand, technical and productivity progress and market power, among others.

Later on, from neo-schumpeterian or “evolutionist” approaches, it was argued that there is a close relation between specialization patterns and growth, stressing the dynamic of technological change.²⁰ In fact, for these approaches, technological change is an activity subjected to high uncertainty and has a strongly tacit nature (it is not perfectly codifiable or transmissible) and cumulative. Therefore, to come to have a full command of the best techniques, developing countries cannot just rely on the opening of the market, investment and technology, but they must also have absorption ability²¹ and develop learning processes that allow them to adopt, adapt and make efficient use of the available combinations. Furthermore, as they progress in the development process, countries require growing innovative capabilities that are initially channeled into the improvement of existent technologies and then into the creation of new technologies, as in the successful cases of Eastern Asia (Fagerberg, 1988; Dahlman and Nelson, 1993; Lall, 2000).

Given that the conditions for these processes to materialize – which are path-dependant and cumulative – are very demanding and usually imply the presence of public policies that solve the problems of market failures and coordination that might hinder them, it is not surprising to see that there are large (and persistent) differences in technological capabilities (and, therefore, in productivity levels) among companies and countries (Dosi et al, 1988).

In turn, from these approaches it has been argued that innovation processes have different characteristics in different sectors, taking into account the diversity of the sources of technological progress, opportunities of innovate and adequacy conditions (Pavitt, 1984). From these differences in innovative processes, it is inferred that there might be systematic gaps in the productivity growth levels and rates among the different sectors. The transformation of production structures – as well as those of trade – towards fast-innovative sectors looks like, therefore, a desirable goal for developing countries that attempt to converge into the income frontier (Dosi et al 1990).²²

Thus, as Cimoli et al (2006) summarizes it, from this perspective, “in these cases the convergence or the divergence can depend on whether the opening is complemented by local efforts of technological learning and the adoption of policies that contribute to a more dynamic specialization pattern”.

Hausman et al (2006) suggest that to generate new highly productive export activities, there are «discovery costs» supported by the businessmen that try to start such activities. However, if those attempts are successful, the pioneering businessmen generate positive externalities for other companies that can take advantage of the new market without facing the mentioned costs. In this sense, Ocampo (2005) points out that the inability to face the entry costs to new productive activities may block the development process. Consequently, there is a new space for public policies that attempt, for example, to diminish such costs.

While there have been many works attempting to prove, empirically, the link between the specialization pattern and growth, we would like to mention, due to its recent impact and the use of strict econometric techniques, the study by Hausmann et al (2005). The authors approach this objective using an indicator that classifies goods according to its “implicit productivity” (calculated on the basis of the weighted average of the GDP per capita of the countries that export each

²⁰ Even in the 1970’s, some contributions suggested that international asymmetries in terms of technological capabilities were the main determining factors of specialization patterns (for example, Posner, 1961).

²¹ Following Dahlman and Nelson (1993), the absorption ability primarily includes the ability to adopt and implement associated technologies and practices in the developed world. Such ability include such factors as human capital, the development of innovative activities, the use of modern organizational and quality practices, etc.

²² As Freeman states (1994): *«economic growth is not merely accompanied by fast-growing new industries and the expansion of such industries; it primarily depends on that expansion».*

product). Then, they calculate the average productivity of different countries' export baskets to find that such measure is a good yard to forecast a country's growth possibilities. In other words, it is one of the first strong empirical corroborations of the argument that suggests that there is a causal link between the specialization pattern and growth.

But we said before that not only a country's export basket composition was important, but also the way in which such export activities integrate into the rest of the economy. In effect, the production sectors do not operate isolated, but they are part of complex structures in which they are linked to other activities and sectors through different forms of direct or indirect interaction. The same takes place at a company level. Such interactions – that also include science and technology organizations, the educational system, etc. – and their crucial relevance in the economic development process are well captured through the concept of national innovation system (NIS).²³ Consequently, it is essential to analyze the magnitude and nature of the interactions and externalities of knowledge that generate on the basis of the different lines of links, somewhat dense, present in various countries and/or different moments (Lundvall, 1988; Pavitt, 1988; Guerrieri and Tylecote, 1994).

Ocampo (2005) summarizes the above arguments adequately when pointing out that “economic growth in developing countries is intrinsically linked to the dynamic of production structures and to policies and institutions specifically created to support them, above all those that facilitate the dissemination of innovations coming from the industrialized world..., foster the creation of productive chains... and tend to reduce the dualism or structural heterogeneity that characterizes developing countries' production structures”.

In this sense, the mere participation of a production sector with high technological dynamism is no guarantee that the country will sustainable speed up its growth process (for example, whether it takes part in stages of the value chain not very sophisticated from a techno-productive viewpoint, it generates little local added value and/or depends on volatile investments –*footloose* – and it is very sensitive to labor costs). This implies that it is necessary to go beyond sector analyses and also use “function-specific” approaches, in which importance is attached to the function (link) and the hierarchy level in the value chain the countries may show. This leads us to the GVC.

To understand, from a conceptual viewpoint, the GVC phenomenon and the participation of the firms (countries) in the different links, it is useful to begin with the idea of transaction costs.²⁴ As is well-known, for Coase (1937) the very existence of the firm is based on the existence of transaction costs, which also determine the drawing line between the firm and the market – the decision of “doing or purchasing” (if the transaction costs exceed those of internalizing the production, the transaction will be integrated into the company; otherwise, it will be done through the market).

Later, Williamson (1975) would point out that there is a whole set of “government structures” for the organization of economic transactions, in which the firm (“hierarchy”) and the market are the two extreme forms. To understand this continuum, Williamson introduces the already mentioned concepts of limited rationality (due to the existence of uncertainty and imperfect information), opportunism (the agents do not necessarily meet their commitments) and specific assets (the degree in which an asset to an alternative use without losing value).

²³ Following Lundvall (1992), an innovative national system comprise all the agents and elements that contribute to the development, introduction, dissemination and use of innovations. In this approach, the innovation and the technological change are not only an issue belonging in universities or R&D laboratories, but they emerge from complex processes in which companies, research institutions, the education system, the financial system, the workers, etc. take part. The key factor is, then, the way these different agents interact as elements of a collective creation and use of knowledge system, which, in turn, has determining influence on a country's possibilities of reaching the sustained growth of its economy.

²⁴ Transaction costs can be defined, in a few words, as those costs resulting from “using the market” – that is, performing a given transaction with a third party instead of “internalizing” it.

Another key issue to be analyzed is the functioning of GVC has to do with the dissemination of knowledge and the processes of capabilities construction by the agents participating in them. As was said before, the firms do not innovate in an isolated way, but they are usually involved in interactive learning processes – with their competitors, suppliers, R&D institutes, universities, etc. - (Johnson, 1992). In fact, technology, knowledge and information flows disseminated through people, companies and institutions are key factors in innovative processes (OECD, 1997). Then, the participation of networks is a key factor to counterbalance the uncertainty inherent in innovative activities,²⁵ while it allows reaching competitive advantages firms acting in an isolated fashion cannot reach. (Yoguel et al, 2005).

However, the mere fact of participating in networks does not guarantee that such advantages will materialize. This will depend, among other factors, on the way the relations within the network are organized, the agents' relative capabilities and powers and the assets offered by the different national environments in which such agents operate.

Taking into account these antecedents, the GVC²⁶ approach focuses, in particular, on studying the relations between companies within the chains and, especially, on analyzing how such relations influence the local companies' performance (and, *a fortiori*, on the processes of development of the economies from which those firms originate). Then, two concepts are key to this approach: the governance structures of the value chain and the upgrading – or lack of it – of the companies making up the network.

When speaking of governance, in addition to the traditional dichotomy (market vs. firm), two additional variants are incorporated. On the one hand, there are less impersonal structures than independent market relations (*arm's length*), but which suppose horizontal coordination structures (*networks*). On the other hand, closer to the extreme of hierarchical models, is a more flexible set of quasi-hierarchical relations.²⁷

These different governance structures in value chains imply different coordination levels – more or less explicit – among the activities performed within them. The governance structures, in turn, are not static, but can be modified throughout the time, which will depend not only on changes to the strategies of the companies involved, but also on institutional and technological factors, organizational innovations, etc. (Gereffi et al, 2005). Now we can ask ourselves what factors the adoption of one form of governance in the different GVC depends on.

The intrinsic characteristics of products – for example their complexity – can influence the degree of an industry's fragmentation. Thus, Lall et al (2004) claim that the intensity of production fragmentation depends on the particularities of the end product, such as the divisibility of the production process, its complexity, the product's value-weight relation, etc. Additionally, the somewhat "strategic" nature for the leading company in the chain, the product or activity in question, also influence the decentralization decisions.

However, these factors do not determine, by themselves, the way in which chains are governed. In this sense, Humphrey y Schmitz (2000) suggest that more hierarchical models will be

²⁵ When talking of innovation, we refer not only to the processes of creation of "new knowledge for the world", but also to those that mean adapting or improving the existent knowledge, as well as the imitation or adoption of knowledge already available but new for a certain company. Additionally, we include not only the technological change in a narrow sense, but also organizational-, trade-changing processes, etc.

²⁶ Among the main references in this literature, it is worth mentioning: Gereffi (1994 and 1999), Gereffi and Korzeniowicz (1994), Kaplinsky (1998), Gibbon (2000), Humphrey and Schmitz (2000), Gereffi and Kaplinsky (2001) and Gereffi et al (2005).

²⁷ Independent relations (*arm's length*) suppose that there is no exchange between suppliers and customers over and above trade transactions. Networks represent a sort of coordination between "equals", where complementarities between suppliers and customers operating with similar technological levels take place. The quasi-hierarchical structures imply power asymmetries in the chain since the leading companies are responsible for designing the product and getting across the corresponding specifications to their suppliers, and usually they also have the control of the sales markets. Lastly, the hierarchical relations imply more coordination-explicit mechanisms in the production process, which usually leads to the owning of the supplying companies by the leading company (Humphrey y Schmitz, 2000).

developed when the costs of internalizing activities are lower than the implicit risks in the relation of the leading company with its suppliers in the chain; these risks will ultimately depend on the capacity of the latter and are, for example, factors associated to quality, delivery time, product reliability, etc.

In turn, in the industrial organization literature, and on the basis of the incomplete contracts theory, there have been presented arguments that suggest that the risks of “externalizing” certain activities also depend on the quality of the contractual environment in which subcontracting firms operate. (Helpman, 2006; Nunn, 2005).

In any case, given the lack of innovative and technological capabilities that, in general, developing countries’ supplier networks show – and the weak legal environments prevailing in such countries – developing countries’ companies are more likely to tend to go into quasi-hierarchical or hierarchical chains, while they are left out of the network-type systems – or they participate in the latter in a marginal or just local way - (Humphrey y Schmitz, 2000).

As we said before, in addition to analyzing governance structures, it is also important to examine to which degree there are upgrading opportunities for those companies located at different states of GVC. While this notion has been subjected to critics due to its “unclear” nature (see Morrison et al, 2006), it is clear that, in general, it refers to the process that allows developing more complex activities within the value chain. This may mean producing more efficiently (*process upgrading*), aiming at higher unit value product lines (*product upgrading*), moving towards tasks that require higher capacities – for example, design or marketing - (*functional upgrading*) or applying the acquired competence to a particular function in order to move to another sector (*intersectorial upgrading*).

As Pietrobelli and Rabelloti (2005) state, *upgrading* should ultimately imply moving away from activities where competitiveness depends on costs and entry barriers are low. Particularly, the *functional upgrading* can diminish a company’s competitive position vulnerability since at the manufacturing stage there is usually more competition of producers with low salaries *vis à vis* more knowledge-intensive activities – such as design, logistics, innovation, etc., where other factors have higher weight (for example, human capital or technological capabilities).

In any case, as said before, to take part in a GVC it is not, *a priori*, a positive aspect from a competitive viewpoint in a company’s long term (nor is it from a country’s economic development prospect), but such participation must be accompanied by a whole set of factors that encourage local companies’ upgrading and allow them to absorb the potential benefits resulting from being into such chains.

The analysis of the subcontracting structures seen in certain East Asia’s countries show open upgrading possibilities in certain contexts. Thus, in some countries like Singapore or Taiwan there was a transition from OEM (*original equipment manufacturer*) contracts – where the national company produces goods totally designed for the TNC, and its purpose is to reduce costs -, to ODM (*original design manufacturer*) structures – in which the product basic design is still performed by the TNC, the local company assembles the parts and components and performs the detail design, to lower costs and reduces the time it takes to delivery it to the market – and, lastly, OBM (*original brand manufacturer*) contracts – in which the local company is not only responsible for the design of the product as a whole, but also its marketing - (Amsdem et al, 2001). Gereffi (1999) – suggests that a similar process took place in the clothing sector, where there was a transformation from assembling activities into what the author calls «*full-package supply*».²⁸

²⁸ «*Full-package suppliers*» are responsible for a series of activities that may range from the purchase of inputs to contributions to the design or global logistics management (Bair y Dussel Peters, 2006).

However, such processes are far from being automatic. Thus, in the case of the software industry it was argued that the experience of the latecomer countries (for example, India) show that the sort of activities with which the sector development is begun may condition their future progress. Thus, beginning with non-innovative and routine activities turn competitive advantages narrow (and closely linked to labor cost) and prone to being similar in different “follower” countries, which must compete with one another (through prices) to gain access to the very same market, with the consequent profit transfer to customers. Meanwhile, when the wish is to penetrate markets where competition is based on quality and technology and not prices, problems come up, both as a result of the presence of well-established competitors and the deficiencies of the local environment (Arora et al, 2001).

Upgrading possibilities depend, on the one hand, on the type of governance in the GVCs the companies enter. Under quasi-hierarchical structures, in which leaders are concentrated in knowledge-intensive activities and only give a series of technical requisites to their suppliers, the exchange of intangible assets encouraging their learning process is likely to be limited (consequently, the most common upgrading type is that to do with products and processes). Instead, in horizontal structures closer to the network, it is common to find cooperation relations between companies, as well as more viable functional upgrading processes (Humphrey y Schmitz, 2000).²⁹

But upgrading – both in intra-company GVCs and in those related to third-parties – also depends on the local conditions. Among them we can mention macroeconomic and institutional stability, current public policies, human capital availability, consolidated clusters, local companies’ technological and absorption ability, the functioning of the national innovation systems and infrastructure availability (Humphrey and Schmitz, 2000 y 2001; Caniëls and Romijn, 2003; Gereffi et al, 2005; Giuliani et al, 2005; Morrison et al, 2006).

To sum up, we believe that the GVCs’ theoretical framework constitutes a useful tool to understand the consequences of the different relation methodologies in international production systems led by TNCs, not only on the performance of the agents taking part in the GVCs, but also on the economic development processes of the countries they operate in. We also understand that it is necessary to complement such approach with an analysis including the impact on local environments and the very characteristics of the production processes and the knowledge flows existent in each case. In the following point we will attempt to explain some of the concepts presented in this point in Latin America’s case.

²⁹ For an empirical analysis of the way upgrading processes and the governance of the GVCs interact see Giuliani et al (2005).

III. Trade and investment in Latin America

Since the early 1980's, Latin American countries witnessed a process of profound structural reforms that resulted in moving from State-led closed industrialization models, based on protected markets and with a low level of integration from a trade viewpoint,³⁰ to the implementation of the so-called “Washington consensus” and which basically rested on a free market and higher opening of economies.

The debate about the global results of this development model change exceeds the objective of this paper, although we will say that, no doubt, were less favorable than initially expected by its promoters, both from a growth viewpoint as well as from one of poverty and equity (Stallings and Peres, 2000; Loayza et al, 2005; Forteza and Tommasi, 2006). In any case, we are interested in examining what happened with the international insertion of the region's economies, despite the fact that the conclusions we will draw might suggest something about the gap between the reforms expectations and achievements. We will see then Latin America's main FDI and international trade trends, including the analysis of how the region's countries se insertan in GVC.

³⁰ In contrast, during most of the import substitution period, the region's countries were generally open to foreign direct investment and other technology sources.

1. The export pattern³¹

Latin America's participation in the world trade has been decreasing virtually constantly in the past fifty years. From an average of almost 10% in 1950- 1959, the region's weight decreased to 4.6% between 1990 and 1999, and increased slightly to 5.4% so far this decade. This performance is in sharp contrast with that of Asia, whose participation almost doubled in the same period. (table 2).

Table 2
PARTICIPATION OF THE MAIN REGIONS IN THE WORLD EXPORTS, 1950-2003
(In percentages)

	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2003
World	100.0	100.0	100.0	100.0	100.0	100.0
Developed countries	66.4	72.3	69.7	68.9	70.0	65.3
Developing countries	29.0	21.6	24.9	25.3	27.5	31.9
Latin America and the Caribbean	9.7	6.5	5.1	5.1	4.6	5.4
Africa	6.4	5.4	5.0	3.9	2.3	2.3
Asia	12.8	9.6	14.6	16.3	20.5	24.2
Oceania	0.1	0.1	0.1	0.1	0.1	0.1
South-East Europe and transitional economies	4.6	6.1	5.4	5.8	2.5	2.9

Source: own based on data from UNCTAD (COMTRADE).

While, naturally, the region's decreased weight in global trade is the result of multiple factors – macroeconomic, foreign-currency rates, political, commercial, etc., we will closely focus on the issue from the point of view of the region's commercial specialization patterns. This is important taking into account what we said about the changes in global trade patterns and the heterogeneous dynamism of the different types of industry.

At first sight we find that the weight of industrialized goods in the export basket grew strongly between 1970 and 2000, from less than 50% to 75% (table 3). A remarkable aspect is the spectacular growth in the participation of «technical progress disseminating» goods in total exports: in 1970 they accounted for 2.4% of them and in 2000 such percentage climbed to 24.3%. This might mean that there was a structural change in Latin American economies, boosted by higher technological intensity in the production system, which might be very encouraging.

However, when comparing these data with the evolution of such group of goods in terms of the region's industrial GDP, the outlook is less optimistic: in the 30 years considered, the “technical progress disseminating” goods increased their share from 21.1% to just 28.3% (CIMOLI et al, 2005a).³² This could mean that the increased complexity of the exports might have taken place independently of the transformations of the product structure.³³

³¹ For an analysis of the evolution of Latin American countries' insertion in world trade, see ECLAC (several years).

³² Within the group studied by Cimoli et al (2005a), the countries that recorded the highest increases in the weight of technical progress disseminating sectors in the manufacturing production were Korea, Singapore and Malaysia, where such activities came to account for 63%, 65% and 55%, respectively in 2000, *vis à vis* 11%, 34% and 16% in 1970. In some more mature economies, such as the United States, some sectors represented 40% of the industrial aggregate value in 1970 and 60% three decades later.

³³ In fact, this phenomenon could be explained, at least partly, by a “composition” effect, since during the period analyzed it was witnessed on the one hand a contraction of the weight of the technical progress disseminating sectors in several countries in the region – for example, Argentina, Chile, Colombia, Peru; in general, these sectors showed low export propensity and a relatively high

Table 3

**LATIN AMERICA AND THE CARIBBEAN. COMPOSITION OF GOODS EXPORTS
BY CATEGORY, 1970-2000**
(Thousands of dollars and percentage)

	1970		1980		1990		2000	
	Value	%	Value	%	Value	%	Value	%
Primary goods	7 499 300	52.0	48 325 682	49.4	52 027 709	42.9	84 096 574	24.3
Industrialized goods	6 830 466	47.4	48 692 112	49.8	68 504 767	56.5	259 473 833	75.0
Traditional goods	2 949 171	20.5	20 731 584	21.2	23 617 378	19.5	68 813 926	19.9
With high economies of scale and highly resource-intensive	3 434 989	23.8	22 324 088	22.8	29 678 273	24.5	60 019 265	17.4
Durables	93 314	0.6	2 107 975	2.2	5 999 460	4.9	46 629 866	13.5
Technical-progress disseminating	352 992	2.4	3 528 465	3.6	9 209 655	7.6	84 010 776	24.3
Other goods	90 484	0.6	794 035	0.8	801 557	0.7	2 182 963	0.6
Total	14 420 250	100.0	97 811 829	100.0	121 334 033	100.0	345 753 371	100.0

Source: own based on ECLAC's data.

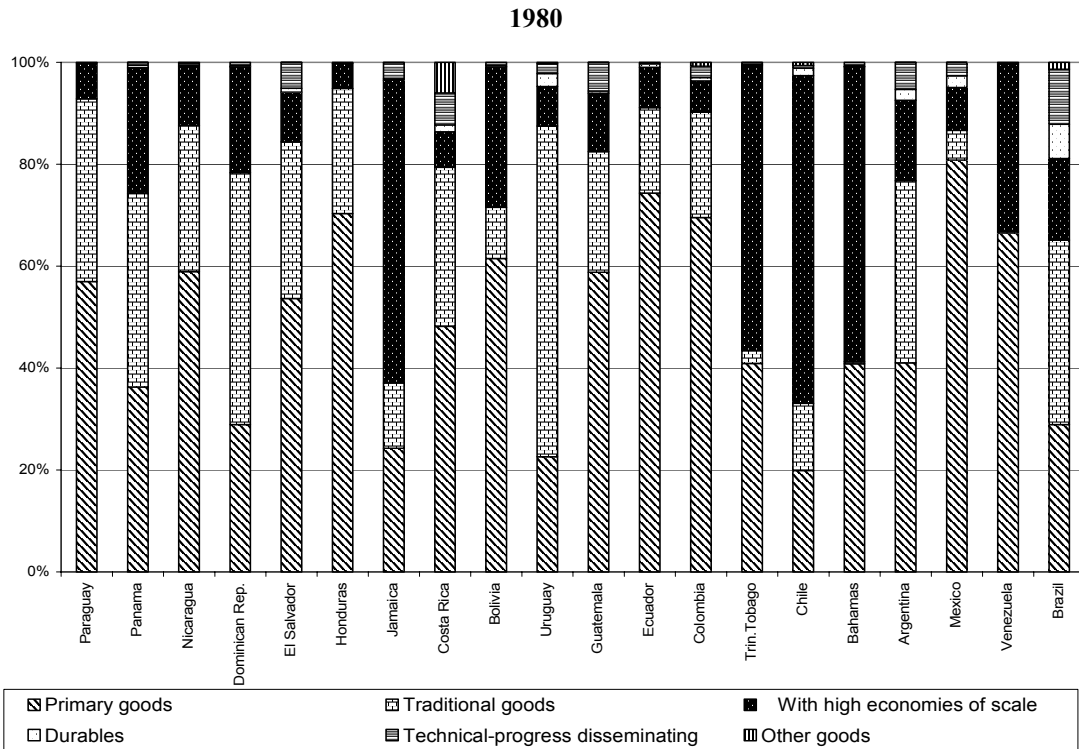
Note: This classification adopted by ECLAC, identifies two large aggregates, that of *primary goods* and that of *industrialized goods*, and within the latter there are four subgroups: *traditional goods*, the manufacturing of foodstuff, drinks and tobacco and other traditional ones such as furniture, tools, footwear, hide, etc., all aimed at end consumption; *goods with high economies of scale and highly resource-intensive*, which includes the petrochemical industry, paper, pulp, cement, basic metals, etc. aimed at intermediate consumption; *durable goods (and parts)*, composed of household appliances, consumption electronic products, vehicles, etc.; *Technical-progress disseminating*, it includes, among other goods, machinery, instruments and fine chemicals.

In turn, the change in the export structure in favor of “technical progress disseminating goods” is highly concentrated in certain economies in the region – especially Mexico, Costa Rica (Intel) and Brazil -,³⁴ while in the rest of the countries have not yet been able to make much progress in the “modernization” of the export structures (see Graph 5).

degree of local integration, in the context of the substitution model. In turn, there was an expansion of this type of activities in countries like Mexico or Costa Rica, with methodologies opposite to those of the substitution model (high propensity to export and scarce local integration). This explains why the presence of these sectors in GDP grow relatively little (*vis à vis* exports): on the one hand, the trends are heterogenous among countries – with rises and falls – and on the other hand, in the cases where there are rises, the respective activities have low local added value (the exception to this trend is Brazil, where the weight of the sectors disseminating technical progress grows, but with a less intense export content and a higher local integration than in the maquila models).

³⁴ Mexico accounted for 83% of the growth in exports of technical progress disseminating goods during the 1990's.

Graph 5
LATIN AMERICA AND THE CARIBBEAN. COMPOSITION OF THE EXPORTS OF GOODS BY CATEGORY, 1980 Y 2000
(In percentages)



Source: own based on ECLAC's data.

Combining these trends with the phenomenon of the increased weight of high-tech sectors in the structure of world trade already discussed, it is not surprising that Latin America shows an export structure not much oriented to the more dynamic markets. According to Cimoli et al (2005a), this may be measured through the so-called “adaptability index”, which shows to which degree a country participates in markets with a higher growth pace worldwide – which may be taken, to some extent, as an approach to elasticities – demand income.³⁵ This index is closely related with the “technical progress disseminating” sectors in the production structure; in general, countries specialized in these sectors show higher values in such index than those that depend on low- and medium-tech sectors – for example, countries in South-East Asia, unlike the Latin American ones, widely surpass the unit, with figures in the region of 3 points.

In Latin American as a whole, the adaptability index went from 0.22 in 1985 to 0.98 in 2002. However, in large countries, the only surpassing the unit is Mexico (the index went from 0.46 to 2.85),³⁶ while in Argentina or Brazil, for example, they are far from that number (in the former the index went from 0.16 to 0.3 and in the latter from 0.23 to 0.55).³⁷

An alternative way of looking at the same phenomenon is by analyzing the principal export products in the region’s countries and comparing to which extent they relate with those where world exports are growing fast.³⁸ The more general conclusion is that this relation is very weak, at least it has been so in the last decade. In this regional landscape, Costa Rica stands out, since out of its ten top export products, two (medicine and parts and accessories of office machines) are among the ten most dynamic in worldwide trade. Of the other countries analyzed, only Mexico (parts and accessories for telecommunication equipment), Argentina (natural and manufactured gas) and Peru (silver) have a product, in their main export lines, within those with the greatest growth worldwide. In general terms, with the exception of Mexico, Costa Rica and Peru, the specialization pattern in the region’s countries is based on markets that grow less than the average of world exports (see appendix, tables A2 y A3). If instead of analyzing the markets’ growth, we analyze the composition of exports on the basis of productivity, we find similar conclusions. Taking the data calculated by Hausmann et al (2005) on the basis of the index mentioned in the previous section, we see that, among Latin American countries, only Mexico has an export basket comparable with that of Asian countries. The authors do an interesting exercise when they compare Chile’s case – a “success story” in terms of resource exports – with other countries with abundant resources, like Australia, Canada, New Zealand and Norway, proving that the Latin-American country ranks behind those in other regions in terms of “quality” of specialization pattern.³⁹

In this general scenario, and stylizing the trends, we appreciate that there is a heterogeneous behavior in the region export-wise (ECLAC, 2004). An early specialization pattern is that of South American countries, whose exports are concentrated in resource-based goods and widely used input-producing goods that show a commodity-type behavior in international markets (steel,

³⁵ This index is defined as the participation of the country’s or region’s exports in the more dynamic sectors of the world demand compared with that in those with less external dynamism. Then, when the index is higher than 1, it means that the country’s or region’s participation in the more dynamic lines surpasses their participation in the non-dynamic in international demand. It is understood that a «virtuous» specialization requires longer time in the adaptability index (see Cimoli et al, 2005a).

³⁶ While this value is similar to those of Malaysia and Korea (2.68 and 2.76, respectively, in 2000), the levels of participation of knowledge disseminating sectors in the industrial structure are far higher in the last two countries (55% and 63% respectively in 2000, as opposed 35% in Mexico). This responds to the growing weight of exports from assembling activities organized within GCV in the Mexican case – see below - (Cimoli et al, 2005a).

³⁷ In Chile the respective figures moved from 0.05 to 0.22, in Colombia from 0.11 a 0.2, in Peru from 0.4 to 0.18 and in Uruguay from 0.43 to 0.75.

³⁸ The analysis is based on data from UNCTAD on disaggregated international trade by the Standards International Trade Classification (SITNC). Thus, we have taken the region’s ten top export products in 2003 in order to analyze to which extent they match the 10 most dynamic products worldwide (estimated on the basis of the calculation the world’s export growth between 1992 and 2003).

³⁹ A recent application of this methodology to the Argentine case shows that the country exports “low productivity” goods (in the jargon used by Asuman et al), which does not forecast good future growth (Guerson et al, 2006).

petrochemicals, aluminum, etc.). Within this framework, the Andean Community's countries show export structures more concentrated in terms of markets and destinations than Argentina and Brazil.

Certainly, the South Cone countries have developed high competitiveness levels in these sectors. Furthermore, progress has been made in the incorporation of knowledge into traditional activities (the case of salmon and copper in Chile, or soybean in Argentina, for example) and some resource-based export lines have been developed through differentiation (for example, wine). In turn, there is certainly export capacity in medium- or high-tech activities (automobile parts in Argentina and Brazil, nuclear engineering in Argentina, aviation equipment in Brazil, etc.) On the whole, however, these interesting phenomena are not enough, in our opinion, to change a landscape that still shows, according to the indicators above, much doubt regarding future trade integration into the world.

A second pattern, much more dynamic than the previous one in terms of export growth rates, is that of Mexico, most of Central America and some Caribbean countries., which are closely related with the integration in GVC – on the basis of the “maquila” structure⁴⁰ and is highly concentrated, destination-wise, in the US – which proves to be one of the weaknesses of this model.⁴¹

This pattern includes a notable weight of manufactured goods close to high-tech products in Mexico and Costa Rica, and of clothing and clothes-making in the case of other countries in Central America and the basin of the Caribbean⁴² (Katz et al, 2001). However, although the sectors are quite different, the main competitive advantage in both cases is cheap labor.

While Mexico's and Costa Rica's cases are different from the general Latin American pattern in terms of export structured, it is precise to complement the sector-level analysis with one of the functions carried out by the countries (and their companies) in the value chain. Thus, following Palma (2003), Mexico's case is interesting since it represents an example of transformation toward a more “knowledge-intensive” production and trade structure and, however, the weak integration of high-tech sectors into the whole of the economy meant a diminished “growth-enhancing” capacity.⁴³

This is due, by and large, to the fact that the electronics industry in Mexico is based, as said before, in “maquila” structures or similar ones, where export-oriented FDI is attracted on the basis of parts.-assembling plants and imported components – with economical labor being the main pull for this kind of operation, which makes the industry be subjected to the constant threat of relocating in lower-cost countries (at present this threat is called China).⁴⁴ In this case, the degree of local integration into exported production is very low – virtually due to the very definition of the maquila structure-, and the technological dynamic is totally based outside the destination country – without the efforts destination governments might have made to reverse these trends being clearly successful so far (CEPAL, 2004; Dussel Peters, 2000; Capdevielle, 2005; Carrillo, 2001) – We will discuss this point further below.

But integration into GVCs is also troublesome for local companies that operate as subcontractors or suppliers in more traditional sectors, since evidence shows that they are subject to strong pressures to keep the business going. Thus, in Honduras, local firms selling to US purchasers have to sign a short-term contract (three months), which forces them to constant production readjustments to adapt to customers' new requirements (Bair and Dussel Peters, 2006). Also, these

⁴⁰ In 2002, just about half of Mexico's exports came from maquilas. Such figures are higher in other countries in the region, going beyond 80% in the case of the Dominican Republic (ECLAC, 2004).

⁴¹ There is a third pattern which includes Panama and several Caribbean economies, in which services – including tourism, finance, and , in Panama, transportation – the main export revenues source (ECLAC, 2004).

⁴² In fact, albeit to a lower extent, some countries in the Caribbean export a notable number of high-tech products such as medical instruments (a case in point is the Dominican Republic, for example). In turn, clothing exports from Mexico are also significant.

⁴³ This is reflected in the sharp drop in the “export multiplier” (defined as the growth rate ratio of both variables) which went from 0.9 in 1970-1981 to 0.1 between 1981 and 2001 (Palma, 2003).

⁴⁴ According to Fleury and Leme Fleury (2006), in the past few years about 600 jobs have been transferred from Mexico's factories to China.

companies are in the least-sophisticated segment of the textile market, selling products that have been subjected to strong “price wars” in recent years.

In this sense, the work carried out by Giuliani et al (2005) is a valuable contribution within the theoretical GVCs’ framework since it explores, on the basis of an empirical study case, the characteristics of the relations between Latin American companies and the TNC in the chains, while it allows evaluating the consequences on the development of the former. In such study, the authors group information gathered for 12 clusters of Latin American companies⁴⁵ which are classified in four groups: traditional manufacturing companies, resource-based, complex-products industries – which primarily involve automobiles and parts, the aeronautic and electronics industry – and software. Then, they compare the characteristics of the intra-company relations in the chain for each of these groups in order to analyze the impact of both the sector specific features and the government structure on the upgrading of local companies.

On this basis, the authors find that quasi-hierarchical chains showed product hierarchization and positive processes in the traditional manufacturing and resource-based sectors, while such processes were somewhat moderate in complex-product industries. The functional upgrading, meanwhile, was negative or neutral in the three groups. The software sector’s chains, in turn, did not show evidence of any sort of upgrading.

The consequences of the power asymmetry between purchases and sellers is very obvious in Mexico’s and Brazil’s footwear-production chains, where local suppliers must accept US or European companies’ price conditions, since the latter have several options to locate their orders. Thus, while the entry in GVC’s has allowed for the product upgrading of those countries’ manufacturers, it has not been the case with functional upgrading, since US purchasers have not wanted to share with their suppliers design or marketing tasks.

Such findings led Giuliani et al (2005) to suggest that chain participation, per se, does not always help local firms go through the upgrading process (and sometimes it even discourages), and when such processes take place, this is due to other factors – for example, the participation of local or regional networks or the companies’ very effort.

While analyzing now the service trade, we see trends similar to those presented in the case of goods. In the first place, we can see a loss in Latin America world exports, which went from 3.8 to 3.3 between 1990 and 2004, once again a contrast with the Asian case, which showed an upwards trend (from 12.1 to 17 in the same period) – estimates on the basis of available statistics from UNCTAD.

Considering now Latin America’s insertion into a highly dynamic service sector and where the role played by human capital and knowledge is vital, like that of software and IT services, we see that its participation is even lower than that in total services –all the region’s countries combined do not reach 1% of global trade (table 4).

Taking, alternatively, data on share in offshore trade – which partly overlap with the previous ones – we see that Latin America’s participation in the world’s market of such services is just 6% - the figure is higher than that reported in the previous paragraph, but we must take into consideration that such estimate excludes the US and Western Europe. Half of the offshore market belongs to Asian countries – led by China-, with Ireland, Canada and Israel being other relevant players. (Farrell et al, 2005).

⁴⁵ The studies took place between 2002 and 2003 and primarily contain information on Mexican and Brazilian companies, plus some cases from companies in Colombia, Chile, Costa Rica and Peru.

Table 4
SOFTWARE AND IT SERVICES EXPORTS - 2004
(Millions of dollars and percentages)

Countries	Millions of US\$	Participation
Ireland	18 484	19.2
India	15 300	15.9
Europe: others	11 592	12.1
Great Britain	10 469	11.0
The United States	8 501	8.8
Germany	7 810	8.1
The Netherlands	3 670	3.8
China	3 600	3.7
Canada	3 129	3.3
Spain	3 086	3.2
Sweden	3 032	3.2
Israel	3 000	3.1
Asia: others	2 260	2.4
Oceania	1 125	1.2
Brazil	300	0.3
Mexico	255	0.3
Argentina	224	0.2
Uruguay	89	0.1
Costa Rica	80	0.18
Chile	33	0.0
Total main exporting countries	96 040	100.0

Source: López and Ramos (2006).

In a context in which there are lots of opportunities to gain access to the outsourcing international market, local firms find it difficult to enter the most attractive stages of their respective GVC (López and Ramos, 2006; Bastos Tigre and Marques, 2006b). Thus, for example, TNCs' affiliates are those gaining access to business process outsourcing contracts, which while depending on competitive costs, it implies that the service supply company is responsible for entire functions of its customer's business, which strengthens its competitive position, since cost advantages add to the tacit knowledge of the company's routine tasks and needs. Among other reasons, a factor explaining the difficulties faced by national capital companies to gain access to this market is that the corporations that outsource their services are also large service or industrial multinationals, used to negotiating with their peers in the IT or consulting sectors (IBM, EDS, Accenture, etc.), due to which it makes this model difficult to replicate in the case of local companies which, in addition to being small, they generally lack the necessary certifications to participate in this type of markets.

In sum, the data presented so far show that in the region there is a specialization pattern based on static comparative advantages (natural resources in South America and cheap labor in Central America and the Caribbean – in the latter case, the phenomenon is related to GVCs, which happens in a much lesser degree in the former case), which shows the weaknesses in the structural change process of the region's economies, reduces the ability to respond to external shocks (by making little diversified exporting structures, based on highly volatile markets) and makes it difficult to make full use of dynamics associated to the knowledge creation and dissemination processes. In turn, the integration into GVCs, when it happens, is based on intensive-labor functions with scarce local added value and restrictions to making headway in the upgrading processes. We will now see that these conclusions are proved when analyzing Latin America's insertion into the FDI flows.

2. FDI behavior

Pari passu their participation in global trade currents, Latin America and the Caribbean have also lost weight in FDI inflows, despite the fact that the volumes received by the region in the past decade reached very high levels.⁴⁶ Thus, we see that in the 1970's, the region used to receive 13% of total FDI and 51% of that destined to developing countries, while in the 1990's such percentages dropped to 11% and 37%, respectively. Once again we see the contrast with Asia, a continent that walks the opposite way (its participation increases from 7% and 27% to 16%, respectively) (Table 5).⁴⁷

Table 5
GLOBAL FDI FLOWS DISTRIBUTION, 1970-2005
(In percentages)

	1970-1980		1980-1990		1990-2000		2000-2005	
	World	DC	World	DC	World	DC	World	DC
Developing countries (DC)	26.0	100.0	23.0	100.0	30.0	100.0	28.0	100.0
South, East and South-East Asia	7.0	27.0	9.0	42.0	16.0	55.0	15.0	52.0
L. America and the Caribbean	13.0	51.0	8.0	35.0	11.0	37.0	10.0	35.0
Argentina	0.5	2.1	0.6	2.7	1.7	5.6	0.5	1.8
Brazil	5.2	20.0	1.8	8.0	2.5	8.2	2.3	8.0
Chile	0.2	0.9	0.5	2.0	0.8	2.8	0.6	2.1
Colombia	0.2	0.8	0.5	2.2	0.5	1.5	0.4	1.5
Costa Rica	0.2	0.7	0.1	0.3	0.1	0.3	0.1	0.2
Ecuador	0.3	1.1	0.1	0.4	0.1	0.4	0.1	0.5
Mexico	1.8	7.1	2.5	11.1	2.1	7.0	2.3	7.9
Peru	0.2	0.7	0.0	0.1	0.4	1.3	0.2	0.7
Uruguay	0.2	0.7	0.1	0.2	0.0	0.1	0.0	0.2
Venezuela	-0.0	-0.1	0.2	0.7	0.5	1.8	0.3	1.1

Source: own based on data from UNCTAD.

A substantial part of FDI that arrived in Latin America was as mergers and acquisitions. Little more than half of the investment funds destined to the region between 1996-2000 was due to change of hands – with remarkable records in Argentina (75%) and Brazil (67%)- (Chudnovsky and López, 2006).⁴⁸ By way of comparison, the respective figure for the average developing countries was just above 30%. Such data are significant before the fact mentioned earlier that FDI impacts on growth may depend on the form FDI takes. Meanwhile, on examining FDI distribution in the region's inner part, we see that it has remained strongly concentrated in the larger economies, – Brazil, Mexico, Argentina and Chile, in that order. These countries, as a whole, absorbed just about

⁴⁶ In the last years, FDI destined to Latin America and the Caribbean grew sharply, from an average of some US\$ 7,400 million in the 1980's to just above US\$ 45,000 million in the 1990's and almost US\$ 84,000 million between 2000-2005 (estimates based on available information from UNCTAD).

⁴⁷ If we only analyze the greenfield FDI – while it is the number of projects, not funds, nevertheless the distribution by region generates useful information -, we see that out of a total number of 5656 of this type of projects in 2002, Southern, East and South-East Asia received 1388 (25%) and Latin America and the Caribbean 562 (10%). Despite the evident improvement in the economic situation in various countries in the region, for 2004 the gap had widened: Asia received 3323 projects over a total of 9488 (35%) and Latin America just 543 (6%) (UNCTAD, 2006).

⁴⁸ While the comparison between the number of merger and acquisition operations *vis à vis* the entry of FDI should be taken cautiously – mainly due to the fact that crossborder M&A are not always financed via FDI-, it still reflects the main trends on the matter.

2/3 of the FDI flows between 1990-2005, with the gross of it destined primarily to the Caribbean's fiscal havens.

On the basis of what we explained above in the field of trade, there are basically two patterns in the region in terms of the FDI received. On the one hand, in South American countries the exploitation of raw material and the access to the (national or regional) market seem to be the determining factors to the localization of FDI (resources and markets search strategy), which basically turned to natural resources sectors, some industrial activities – mainly automobiles, chemicals and foodstuff – and services (for example public services, banks and trade).

In contrast, few are the cases in which the affiliates have taken global responsibilities within their own corporations. In Brazil some firms set up product development centers in sectors such as the automobile one – as is the case of “popular cars” -,⁴⁹ autoparts – for example, biofuel and trifuel engines, shock absorbers – and telecommunications equipment - software, invoicing systems, switching networks - (Carneiro Dias and Ribeiro Galina, 2000; Quadros et al, 1999). In turn, Böhe and Zawislak (2003) find some cases of global Brazilian affiliates in R&D (the most important case is the Siemens center for hydroelectrical energy equipment). In the same sense, the automobile industry in Brazil has become a sort of “laboratory” some world changes in terms of industrial organization (for example “modularization” of plants; see ECLAC, 2005). In Argentina, these cases are even more isolated (recently Volkswagen announced the production of a “global” car – the Suran – in its affiliate)⁵⁰ All these examples, however, are not enough to change the general landscape described earlier.

On the other hand, Mexico, Central America and the Caribbean basin, by and large, drew the investment seeking to improve efficiency in the industrial sector (including lines such as automobile, textil and clothing and electronics) and motivated by the low labor costs (ECLAC, 2000). These investments are mainly established at labor-intensive stages in the TNCs' production networks and, as said before, they usually function similarly to «enclaves», with low integration levels into the domestic economies.⁵¹

One way of evaluating the different degrees of GVCs integration into the various regions in the continent – in this case, including only the intracompany or upgrading – is by examining the intracompany trade data. With information on US TNCs (produced by the *Bureau of Economic Analysis*) we find that, in fact, the highest intracompany trade coefficients are concentrated in Central America and the Caribbean basin, while the South Cone is below the regional average.

In a context where the proportion of intracompany trade of US TNCs' affiliates in the region has been increasing (from 53 to 74% between 1983 and 2003), Honduras, Barbados, Colombia, Mexico and Costa Rica, in that order, are the countries with the highest percentages of intracompany exports – with figures in the region of 90% in 2003-. In turn, in Chile, Brazil and Argentina, intracompany trade accounts for 47%, 65% y 69% of total exports. Significantly, such differences are not only in goods trade, but also in services: while intracompany exports reach 87% of the whole exports in Mexico, the figures are 47% and 74% en Argentina y Brazil, respectively.

Instead, there are no significant differences on the continent when analyzing the participation of countries in this R&D decentralization trend. During the substitutive industrialization of imports, TNCs had to carry out, especially in the largest countries, adaptive innovation activities, in

⁴⁹ An interesting example is the development of vehicles for the world market is that in Meriva, of General Motors, whose concept was proposed to headquarters by the Brazilian affiliate, as a derived product from Corsa. Thus, the Brazilian affiliate was the venue of a vehicle initially launched in the country and, subsequently, in Europe, investing the traditional sequence of product launching. Something similar happened with Fox by Volkswagen, derived from the Polo European platform, which was initially thought out for the Brazilian market and other emerging markets, and then it was exported to more sophisticated markets such as the European one (ECLAC, 2005; UNCTAD, 2005).

⁵⁰ The model's design, however, was not done in Argentina.

⁵¹ In fact, Mexico also received important market-seeking FDI flows, both in industrial and service sectors.

order to adapt the imported technologies from their home countries to the characteristics of the destination countries. At present, while that adaptive activity has less weight than in the past, since TNCs operate more and more with standardized technological platforms both worldwide as well as regionwide (Cimoli and Katz, 2003), the affiliates in the region do not seem to strongly attract R&D operations aimed at generating technologies for the world's market (only Brazil seems to be a significant location – graph 2-) (UNCTAD, 2005).⁵²

As regards FDI inflow related to international tradable services, we have the evidence shown above which refers to IT projects (tables 1 and A1). With just 3.6% out of total projects, Latin America does not seem to be a relevant destination in the period analyzed, although it gains certain relative weight in the call center projects (5.7%) – exactly the kind of projects where labor cost is higher.⁵³

In order to look into the region's relatively low attraction for this kind of projects, it is useful to analyze the data from table 6, where the relative position of several offshore locations is measured on the basis of objective indicators that attempt to capture key variables for corporate decision-making: financial structure, availability and qualifications of the labor force and business environment.⁵⁴

Brazil (7th place) and Chile (9th place) are the best-ranked places in the region. Mexico, Costa Rica and Argentina are a few places below. In any case, we can see a general pattern in which the main advantage of Latin America's countries is the "financial structure" – which basically measures the economy's costs (including salaries). Instead, they are behind in terms of the variables related to human resources – both due to disponitibility and education level – and the business environment. This, naturally, limits the type of activities that may be descentralize towards the region.

Now, the differences in the degree and form of insertion of Latin America's different regions into GVCs led by TNCs do not seem to generate notable differential impacts in terms of the FDI impact on the continent's economies. In the case of MERCOSUR, recent research (see Chudnovsky and López, 2006) show that the macroeconomic impacts from FDI have not been very significant, since its effects on GDP growth and investment have been neutral.⁵⁵ In contrast, the FDI microeconomic impacts – limiting ourselves to the flow into the industrial sector – seemed to have been stronger, although with heterogenous signs. On the one hand, TNCs affiliates are more integrated from a trade viewpoint than national companies, both import- and export-wise. However, the greatest export insertion of affiliates do not generate spillovers to local firms (that is, it does not help them turn into exporters) – except in Brazil, where such spillovers seem to have existed, but insignificant and with heterogenous signs, generally benefitting local firms with the highest productivity and harming those with the lowest.

⁵² The available econometric evidence tends to, by and large, reinforce the idea that innovation activities are little relevant in the affiliates located in the region and that if in some cases TNCs are more innovative than local companies, this is due to the knowledge they receive from their parent companies and not to local developments. In the case of Chile, Benavente (2004) finds that the origin of the capital does not seem to influence the likelihood of investing in R&D, a finding shared by Chudnovsky et al (2006a), whom, additionally, prove by using data from the last two surveys on Argentina's innovation that nationality is not a variable that explains the possibility of launching innovations onto the market. In turn, Laplane et al (2006) and Dias de Araujo (2005) find that TNCs are less prone to spending on R&D than their local peers on the basis of data from Brazil's innovation survey (PINTEC) for the year 2000. Lastly, in Mexico, Meza González and Mora Yagüe (2005) claim that there is no evidence of any relation between the origin of the capital and the intensity of investment on R&D, albeit foreign companies are more likely to invest in R&D than local companies. See López and Orlicki (2006) for further details on this issue.

⁵³ Unlike other regions in which some countries became the favorite locations for TNCs investments in this sector, in Latin America, so far, there not seem to be a clear choice of one economy on the continent (OECD, 2006a), despite the fact that Brazil looks like the regional leader.

⁵⁴ The first item weighs 40% in the indicator and includes such variables as labor costs, taxes, infrastructure costs and regulations. The second weighs 30% and includes labor experience, qualifications, education level, etc. The last point weighs 30% and involves the political and economic environment, copyrights, labor force adaptability and quantity and quality indicators of the available infrastructure.

⁵⁵ This type of finding repeats itself in studies on other countries in the region. Thus, for example, Chowdhury and Mavrotas (2005) find that in Chile the relation goes from growth to FDI, but not in the reverse direction.

Table 6
OFFSHORE LOCATION ATTRACTIVENESS, 2004
(Index numbers)

Countries	Human Resources	Business Environment	Financial Structure
India	2.09	1.31	3.72
China	1.36	0.93	3.32
Malaysia	0.73	1.77	3.09
Czech Republic	0.92	2.02	2.64
Singapore	1.36	2.63	1.47
The Philippines	0.94	0.92	3.59
Brazil	0.86	1.41	3.17
Canada	1.94	2.48	1.00
Chile	0.70	1.68	2.98
Poland	0.88	1.57	2.88
Hungary	0.90	1.68	2.71
New Zealand	1.38	2.24	1.59
Thailand	0.57	1.19	3.44
Mexico	0.74	1.26	3.12
Argentina	0.74	1.08	3.25
Costa Rica	0.67	1.33	3.06
South Africa	0.94	1.21	2.83
Australia	1.58	2.13	1.11
Portugal	0.88	1.99	1.84
Vietnam	0.35	0.70	3.65
Russia	0.89	0.51	3.25
Spain	1.38	2.05	1.12
Ireland	1.39	2.48	0.62
Israel	1.06	1.74	1.66
Turkey	0.64	0.73	3.07

Source: A.T. Kearney *Offshore Location Attractiveness Index 2004*.

In turn, in at least an important part of foreign firms operating in the region, there is a considerable sort of intracompany “labor division” in which the technological content of the affiliates’ exports is lower than its imports, and most of them are towards developing countries – preferably Latin America-, without taking advantage of the possibilities that might come up for affiliates in the home markets of their respective parent companies. On the other hand, the affiliates tend to supply themselves mostly from their home countries, particularly when it comes to the most technology-intensive goods.

In terms of productivity, the presence of TNC seems to have given rise to positive spillovers to the local companies that supply them. In contrast, horizontal spillovers – that is, among competitive companies in one line – are scarce and seemingly depend on a series of characteristics of the local companies and the markets in which they operate⁵⁶ (Chudnovsky and López, 2006). Similar findings are reported for Colombia’s case, where there is no evidence of horizontal spillovers, but of vertical ones. (Kugler, 2006).

⁵⁶ Thus, in Argentina the companies with the most absorption capacity benefitted from the presence of TNC, while in Brazil that was the case with the national companies with the widest productivity gap *vis à vis* TNCs. While in the former, the hypothesis behind such finding is based on the fact that the greater the absorption capacity, the easier to transfer knowledge from TNCs’ affiliates to local firms, in the latter it might be due to the effect produced when FDI arrives massively in a country to make full use of its local market and displaces local firms competing directly with foreign affiliates in the same markets (Chudnovsky and López, 2006).

In Mexico's case, meanwhile, FDI impacts, albeit positive in terms of exports, employment and salaries (at least in certain regions of the country), have been weak in terms of production chains,⁵⁷ human resources training and technological development on a local level (Capdevielle, 2005; ECLAC, 2005; Dussel Peters, 2003). In the case of the electronics area, for example, according to official data, the national integration in the *maquila* is just 3% (Gallagher and Zarsky, 2004). The local innovative dynamism, in turn, is just about nil, which, obviously, limits the learning processes.⁵⁸ Meanwhile, in a study for the automobile sector, it is pointed out that Mexico's export success was because it consolidated an export platform and not because it established an automobile manufacturing center, given the high foreign content in exported vehicles (Mortimore y Barron, 2005). Naturally, the weakness of the local links reduces the magnitude of potential spillovers.

Meanwhile, Bair and Dussel Peters (2006), when analyzing the clothing industry, state that, despite the optimistic expectations when entering NAFTA about the possibility of not only increasing clothes exports to the US, but also of moving from assembling structures to «full-package manufacturing» ones, data show that not only did it not occur consistently in time,⁵⁹ but also that it took place in a textile district, but not in the rest of the country. In more general terms, if in the *maquila* industries and similar ones there was product and process upgrading, and even organizational complexity and the autonomy of the affiliates intensified, this was not accompanied accordingly by functional upgrading, nor has it prevented labor from being the most important local added value in such activities (Capdevielle, 2006).

Something similar happens in Costa Rica with the advent of FDI in high-tech sectors (a paradigmatic case is Intel), since production in these sectors is carried out with hardly any local links, both in terms of suppliers⁶⁰ and in terms of technological development. FDI in those sectors does not seem to have generated externalities for local companies by means of human capital mobility either. Additionally, a dual export – and industrial – structure has been consolidated, since national companies specialize in primary and traditional goods (Ciarli and Giuliani, 2005). The same kind of break of links appears in Honduras's textile industry, where while foreign subsidiaries are less exposed to pressures by customers than their local peers, they virtually lack links with domestic companies, which obviously limits externalities resulting from their activities (Bair y Dussel Peters, 2006).

In a very different sector and country, Argentina's software and IT services, the situation does not seem to be all that different (López and Ramos, 2006). In this case, for local capital firms to move from software factory activities to more complex processes – such as ITO and BPO – it seems to be essential, among other factors, that a knowledge and training transfer link be established with the TNCs that do actively participate in the ITO and BPO business. However, so far, this sort of links have been rather weak or non-existent.

In fact, this general landscape hides some significant differences among the countries in the region, with Brazil being, as a whole, the relatively best positioned in terms of impacts from FDI. Thus, Fleury and Leme Fleury (2006) report that in the face of China's emergence as a global competitor in the textile industry, TNCs' affiliates located in Brazil have focused on specializations and high value-added products, which shows the interest to remain in that market (as well as the fact that the respective productions are not primarily based on low labor costs).

⁵⁷ The percentage of local input in the total intermediate consumption of Mexico's manufacturing activity has been in the region of 10%, while in the temporary programs of imports for exports, the respective figures double. Nevertheless, only 30% of such inputs are industrial, being the rest services difficult to replace for imports due to physical barriers (Capdevielle, 2005).

⁵⁸ It is worth pointing out that, however, some authors highlight that, gradually, particularly in the newer establishments, design and R&D activities are being incorporated and there is higher integration into the local economy – that would be the case of IBM, for example- (Mattar et al, 2002).

⁵⁹ Between 2000 and 2004 clothing exports from Mexico to the US dropped by 20%, mainly due to the competition of products from China (Bair and Dussel Peters, 2006).

⁶⁰ Just 1 5% of the input used by Costa Rica's high-tech industry is local in origin.

Meanwhile, Chudnovsky and López (2006) suggest that, in the TNCs' restructuring process after the establishment of MERCOSUR, Brazil seems to be the most benefitted country since there: i) key functions for the corporation – both regionally and in some cases globally (regional headquarters, R&D, etc.) tend to be centralized; ii) the most FDI in high-tech that arrives in Mercosur; iii) FDI's exports' technological content is higher. These trends are the result of a combination of structural factors (the higher size of Brazil's economy, its superior industrial development) and of public policies (regimes that encourage TNCs to develop R&D activities in Brazil and attract investment to high-tech sectors).

We finish this section by commenting on a lesser-known phenomenon, but increasingly important in several countries, that of FDI made by Latin American companies («multilatinas»). FDI from developing countries went from an annual average of US\$106 million between 1970-1974 to almost US\$ 9,500 million in 1985-1989, to reach later US\$ 76,400 million between 2000 and 2004. Latin America had less influence in this trend *vis a vis* Asian economies. While the weight of the latter region went from 3% of total FDI from developing countries between 1970 and 1974, to 67% between 2000 and 2004, Latin America's participation dropped from 50% to 32% - percentage that is just 12% if the Caribbean major financial centers are excluded - (ECLAC, 2005). Thus, it is not surprising that so far among the top 100 TNCs from developing countries, only 12 are from Latin America (8 from Mexico, 3 from Brazil and 1 from Venezuela). In addition to 11 South African companies and one Egyptian, the remaining 76 come from South and East Asia (UNCTAD, 2006).

As to which were the Latin American countries most connected with this phenomenon, the main players have changed in the past few years. Argentina, whose companies were pioneers in materializing FDI operations already in the XX century and also an important issuer of FDI both in the 1960's and 1970's and then in the 1990's, has lost weight in the last few years – basically due to the sale of a large part of its major companies to foreign companies. Meanwhile, Mexico, Chile and, more recently, Brazil, have become the leaders in the issuance of FDI from the region (Chudnovsky et al, 1999; ECLAC, 2005).

Once again, we are interested in highlighting the differences between the «multilatinas» FDI and that of their Asian peers. In the former, investments tend to concentrate in basic industries – hydrocarbons, extractive mining, steel industry, cement, etc. -, food and beverages, and some services – engineering and telecommunications mostly. On the other hand, FDI from Asian companies is quite based on high-tech sectors (ECLAC, 2005).⁶¹ Also, while Asian TNCs display growing strategies in search of efficient or strategic assets, in the case of the «multilatinas», the search for natural resources or markets, which may reduce potential positive externalities that might result from issuing economies.

Certainly, there are cases of Latin American companies reaching global excellence levels in their respective industries (for example Techint in Argentina, Cemex in México, Petrobrás in Brazil) and some even compete in activities subject to a fast technological change or in which competition by means of design and innovation is key - Embraer (Brazil) in the aeronautical sector (see Goldstein, 2002), Telmex and América Móviles (Mexico), in telecommunications, IMPSA (Argentina) in energy equipment. In general, they are exceptions in a not very dynamic context in terms of companies capable of going global.

Summing up, Latin America has played a significant role as a destination of FDI, but the impacts of this advantage – before regions much less attractive like Africa -, have not been so powerful. In some cases, because the FDI's main objective was not to be part of the countries in GVCs led by TNCs, but basically exploit domestic and regional markets and take advantage of the human resources stock (South America). In others (Central America, the Caribbean, and Mexico),

⁶¹ Twenty four out of the 76 main Asian TNCs operate in IT, electronics and telecommunication sectors, while this only takes place in 2 of the 12 «multilatinas» (UNCTAD, 2005).

because while the integration into GVCs existed, it was primarily based on advantages related to labor costs, generating scarce local spillovers – both technological and in terms of links with supplier -, with little significant advances in upgrading and being subject to change of location threats towards areas with lower salaries.⁶²

We understand that they are mostly structural deficiencies in the region's countries, along with the lack of adequate public policies, the factors underlying these results are not so favorable. These are the same deficiencies that help explain why the early FDI in Latin America is weak. In the following section we will look into such problems.

⁶² Surely, the feasibility of the relocation depends on various factors, but a crucial element is the balance between the salary differences and other costs that exist between alternative locations and transportation costs. The latter weighs very differently in different sectors, from almost zero (IT services), through low/moderate incidence (electronics, textile) to activities where transportation costs – and in more general terms logistics costs (automobile manufacturing chain). Another important element is the existence or not of trade preferences among the countries involved. .

IV. Determining factors of Latin America's current insertion pattern into the international economy: a brief discussion

Surely, understanding the causes underlying the trends described in the previous section is a very complex task, not only because in a landscape with more shadows than light there is a quite heterogeneous reality, but also because causes are multiple and their analysis implies a research agenda only partially covered so far. Nevertheless, and without detriment to what we just pointed out, we believe that it is possible at least to highlight a series of hypotheses of the factors that explain the present pattern of Latin America's insertion into the global economy.

We can begin by mentioning the obstacles coming from the international scenario. In this field, Latin American countries are affected by different types of trade barriers existing in developing countries, ranging from “tariffs peaks” – customs fees much higher than the average-, to sanitary, technical and/or environmental standards, compensatory rights and antidumping, quantitative restrictions and other neo-protectionist mechanisms. Many times these restrictions are applied in such a way that hinder the export of high added value products, which could be a factor that helps explain why Latin America presents a high percentage of participation of primary products in its external sales (Silva and Heirman, 1999).

Continuing in the international sphere, the largest TNCs' strategies also introduce conditions for region's entry into the global economy, since they are responsible for organizing the main GVCs and

defining what activities to be decentralized and where to be located. In this sense, and while we have seen that R&D activities are even being decentralized, so far outsourcing is done, basically, to seek low labor costs and/or natural resources, which limits the developing countries' insertion as well as the upgrading of the firms from such countries in the GVCs. The very structure of governance of most GVCs in which Latin American countries take part is also a factor that goes contrary to a better pattern of insertion of the region's companies in world trade currents. In fact, due by and large to the weaknesses of the local environment (see below), such companies are integrated in hierarchical and quasi-hierarchical chains in which, as we explained in previous sections, upgrading possibilities are lower than in organizations closer to networks or horizontal networks.

Another factor that reduces externalities and chains emerging from TNCs in Latin America is the fact that such corporations have been increasingly adopting standardized technological platforms – which reduce the need for adaptive and/or idiosyncratic innovation activities – and the display of global supplier networks – which makes it more difficult for companies to enter TNCs' supplying chains.

However, there is surely limiting factors coming from the local environment, since other regions of the developing world (as in East Asia) seem to be developing much more successfully in the same international scenario *vis à vis* Latin America. In fact, the Asian companies' greatest development is the result of a whole series of factors typical of their home countries and that have differentiated their development in comparison with those in Latin America in the past few decades. It would be really lengthy to go through this analysis exhaustively, due to which we would limit ourselves to mentioning only those more closely related to the differences in the way they are inserted into the global economy.

A first key factor is the endemic instability of the rules of the game in most countries in Latin America – and which adds to the macroeconomic volatility. This has gone contrary to the development of long-term returns activities – for example, investment in physical capital, R&D tasks – and has favored short-term profit-seeking, behaviors which have even been extended by and large to foreign companies with investments in the region – limiting the impact of FDI on the economic development processes in destination countries. The instability has always had consequences on the production structure – and *a fortiori* – on the trade specialization pattern. Following Fanelli and Frenkel (1996), in countries that have gone through long periods of instability and in which – to a large extent due to that very instability – the long-term capital markets are non-existent or narrow, the companies that survive are not necessarily the most capable of allocating resources efficiently or of innovating, but the ones that are in lines less affected by flaws or the incomplete nature of the financial market. The companies that operate in lines with a fast technological pace are among the most affected by this type of environment.

Also, and as we mentioned in the previous section, the quality of the institutional environment, including the contractual organization, is a determining factor for the possibilities countries have of entering dense international networks or patterns, since weak property rights increase the risks perceived by the agents that wish to establish outsourcing relations with companies from other countries. In this sense, the institutional fragility of many countries in the region seems to plot against their companies' possibilities of entering GVCs.

In the second place, Latin American countries continue to present, as the “ECLAC-esque” thought of the the 1950's and 1960's pointed out, “dual” structures characterized by large production differences among the modern sectors and those lagging behind, which are transferred to a large extent to a strong heterogeneity in terms the material conditions of the population's life, which it has even worsened in the past few decades in most of the region (Cimoli y Katz, 2003; Katz, 2001). This, as we analyzed in previous sections, is closely related to the uneven degree of integration in the GVCs seen in economies such as Mexico and others of Central America and the Caribbean where, in fact, the integration can even worsen pre-existent domestic structural

heterogeneities (see Capdevielle, 2005, for a discussion on this issue). Even in countries in which FDI is not destined to “maquila” activities, a large part of the local companies cannot act as suppliers of TNCs – due to lack of efficiency, quality, reliability or technological refurbishing -, which limits the possibility of production chains emerging.

The availability of human capital is also a factor that provides disadvantages for Latin American countries. On the one hand, the number of university students in the region – with some exception (for example Argentina) – is relatively low relative to the whole of the population. On the other hand, the proportion of students in careers related to engineering and the hard sciences is also low by international standards. Meanwhile, in terms of primary and secondary education, there are serious weaknesses as to the students’ performance, especially in mathematics and sciences, key areas for the performance in the modern systems of production based on ICTs (see OECD/UNESCO-UIS, 2003). These lacks make it difficult to establish knowledge-intensive activities in several countries in the region, as well as functional upgrading in the GVCs.

The innovation national systems, meanwhile, are very weak and desarticulated. As is well known, in Latin America the investment in R&D and innovation is low (particularly the part financed and adjusted privately),⁶³ while as a percentage of GDP it has grown more slowly in the past few decades than in other countries of late industrialization.

Also, there is little interaction between the production sector and the universities and science and technology organisms. A way to evaluate this phenomenon is by means of the “index of use of opportunities” developed by Albuquerque (2001), in which he relates, for a certain country, its participation in the patents in the US and its weight in the world’s scientific publications.⁶⁴ Table 7 shows the results of the estimate of such index for several Latin American countries in comparison with other nations, both developed and developing ones. The data are very clear: while in Asian nations such as Taiwan, Korea, Japan or Singapore this index is high, Latin American countries are underusing their scientific potential – at least from a technological development capacity point of view.⁶⁵

The weakness of the innovation national systems has multiple consequences on the phenomenon under analysis, both due to its limits to externalities that might result from the integration of the region’s economies into the world’s market and to the negative feedback generated between such weak systems and production structures with low presence in intensive or knowledge-disseminating sectors.

Another of the main domestic limiting factors that we believe is rather important comes from the fact that Latin American countries receive great FDI inflows, but their role as issuers is much less intense. Thus, «multilatinas» are far fewer and have a more limited technological dynamic than their Asian peers. While the weakness of «multilatinas» is also the result of the above-mentioned factors, it in turn reinforces Latin America’s integration problems. As Kosacoff (1999) mentions, having local companies capable of going international – and organizing their own GVCs – can generate, potentially, a series of advantages for the home countries, including the strengthening of the export capacity, the emergence or intensification of chains with suppliers and other national

⁶³ In effect, the distance between Sweden or Israel and Colombia in terms of R&D private spending as a percentage of GDP is 30 to 1, and between Korea and Brazil – by far the Latin American country with the highest investment in R&D – from 5 to 1. Instead, Korea –and also Japan- spend just 25% more than Brazil in the university public sector, always related to GDP and Sweden spends a little more than ten times the level of Colombia (estimated on the basis of data from UNESCO).

⁶⁴ While, as the author points out, it is an index which is not problem-free, particularly considering that the two variables it relates do not always represent precisely the technological and scientific potential of a country, nevertheless, it is a good way of addressing the following question: to which extent the results of the scientific activity of a country translate into concrete technological developments?

⁶⁵ In fact, the number of patents granted to Latin American residents in the US increased from 154 to 352 between 1988 and 2001, as opposed to more than 4000 granted to Korean residents or just about 6000 to Taiwanese in the last year mentioned. Even in a country like Singapore, with a strong presence of TNCs, residents obtain in a year more patents in the US than the all Latin Americans combined.

companies and greater local development of “strategic” activities for the corporation (for example R&D), among others.

Table 7
INDEX OF USE OF OPPORTUNITIES, 2001

	Patents ^a (A) (%)	Public. ^b (B) (%)	IUO (A)/(B)		Patents ^c (A) (%)	Public. ^c (B) (%)	IUO (A)/(B)
Taiwan	6.9	1.2	5.5	Venezuela	0.0	0.1	0.4
Japan	42.4	8.8	4.8	Peru	0.0	0.0	0.4
Korea	4.5	1.7	2.7	Colombia	0.0	0.1	0.3
Germany	14.4	6.7	2.1	Costa Rica	0.0	0.0	0.3
Suecia	2.2	1.6	1.4	México	0.1	0.5	0.2
Canada	4.6	3.5	1.3	Indonesia	0.0	0.0	0.2
Finland	0.9	0.8	1.2	Argentina	0.1	0.5	0.1
Singapore	0.4	0.4	0.9	India	0.2	1.7	0.1
Ireland	0.2	0.3	0.7	Brazil	0.1	1.1	0.1
England	5.1	7.3	0.7	Chile	0.0	0.2	0.1
Malaysia	0.1	0.1	0.7	China	0.3	3.2	0.1
Australia	1.1	2.3	0.5	Uruguay	0.0	0.0	0.0

Source: own based on data from ISI and the *United States Patent and Trademark Office* (USPTO).

^a participation in total patents granted to foreigners in the US; ^b participation in the total of the world's scientific (Science Citation Index).

In the field of public policies, strong deficiencies hindering an improved global positioning of the region's countries has been noted. Particularly, the structural reforms of the 1990's – opening of the economy, privatizations, etc. – were not accompanied by complementary policies aimed at solving market and coordination flaws, which affect the access to financing, human capital and information on technologies and markets, hinder the “discovery” of new export activities (Hausmann and Rodrik, 2003) and harm the technological change processes.

Meanwhile, in Latin America's and the Caribbean's countries, the maquila establishment policies, export special zones or programs, etc., did not succeed in producing significant externalities by means of local production or technological chains, which makes us wonder whether the maquila model itself might “withstand” such chains without affecting the objectives set by the TNCs that invest under those regimes (Dussel Peters, 2003).

Also, the massive entry of FDI into the region was not accompanied by explicit strategies tending to develop the local suppliers' technological capabilities, while they did not furnish incentives aiming at focusing TNCs' investments on areas essential for the development of the respective countries (Katz et al, 2001). In other words, Latin America, in general, showed a passive attitude in terms of FDI, without taking advantage of the possibilities of adopting a strategy based on attracting investment destined to cover specific objectives of national development as was the case, for example, in such countries as Singapore or Ireland (Lall, 1995).

Lastly, in the field of science and technology, policies were initially marginalized in the reform agenda, while the opening of the market and the mechanisms to trigger the necessary technological change process to restructure the region's economies received all the spotlight. However, in the mid-1990's some innovation incentive tools were put in motion in various countries in the region (Cimoli y otros, 2005b). There is some evidence suggesting that this sort of

policies have given rise to positive impacts on their beneficiaries,⁶⁶ but without a notable impact on the region's general innovative dynamic. To this end, as suggested by Cimoli et al (2005b), it is probably necessary to implement science and technology policies much more closely related to industrial and production development policies – and with a consequent change in the specialization pattern of the region's countries.

Closing this section, we will say that in the case of Asian countries whose reality we have been comparing with Latin America's, the role of public policies in the fields of foreign trade, FDI and innovation was crucial to reaching the economic development goals set in each case. We understand, therefore, that is one of the most important factors to explain the shadows shown Latin America's present insertion into the world's economy.

⁶⁶ For example, in Argentina subsidies for technological innovation have increased the investment in R&D of the destination companies, and in particular in the case of companies that did not use to invest in R&D, we can see that boosts the process, that is, subsidies drive the company not only to invest more due to the amount granted by the State, but also to contribute funds of its own (Chudnovsky et al, 2006b).

V. Final thoughts

In this study we have reviewed some of the main trends seen in the past few years, both globally and regionally, in terms of investments and foreign trade. In general, we could see that developing countries, as a group, have known how to take better advantage of structural changes that took place internationally relative to previous decades, both in the capturing of FDI flows – even those aimed at R&D activities – and in the “modernization” of the trade especialization pattern.

The integration of global production chains or GPC constituted, in this sense, a key mechanism for the catching-up of several countries that lagged behind in production practices, technological standards, human resources, etc. relative to the central countries. However, such integration was far from homogenous with the developing countries group. Thus, on further analyzing how these changes took place in Latin America, we can see that the region as a whole does not seem to have achieved an insertion into the global economy allowing it to guarantee a sustainable long-term growth path.

In the first place, it is necessary to highlight that “Latin American countries” as a whole constitute, in fact, a very heterogenous group – within the countries there are also very fragmented realities, as a consequence of the structural heterogeneity that characterizes most of the region’s nations. Actually, some small economies still remain rather isolated in the new international trends, since they still show traditional social and economic structures. Meanwhile, other small countries in Central America and the Caribbean are integrated through cheap labor – which allows them to export, primarily to the US from clothing to medical and electronic instruments through the “maquila” or similar structures-

or by means of tourism, financial or transport services. Finally, in the larger economies, there are two different models, one based on cheap labor – similar to the described in the previous paragraph (Mexico) and another, which is in fact part of more developing inner markets, where the integration is by and large due to the abundant natural resources, complemented in some cases with relatively extensive domestic markets (Argentina, Chile, and several Andean countries and, to some extent, also Brazil falls into this group).

Over and above such variables, while the new economic model implemented after the import substitution industrialization allowed the region to reach higher integration into the global economy, it is equally true Latin America so far has not been able to satisfactorily translate this new orientation into concrete results, either from a quantitative point of view, or, more importantly, from a qualitative one. Quantitatively, the region's participation in trade and FDI flows (both received as issued) are lower than 30 or 40 years ago. Also, Latin America is inserted weakly in the new trends, such as the decentralization of R&D activities or tech-based corporate services outsourcing. In the qualitative front, regardless the existence of different specialization patterns in Latin America, they are all primarily based in static comparative advantages, be it natural resources in South America or low labor costs in Central America and the Caribbean – area in which natural resources linked to tourism are also important in most countries. In any case, the analysis of the export baskets of the region's countries before some criteria used customarily to judge their "quality" – for example relative production, technological progress rate, growth rate of destination markets – reveals strong disadvantages relative to, for example, the dynamic nucleus of East Asia countries, which has been growing at very fast rates for several decades. Even in the cases that look like exceptions to this rule – basically Mexico and Costa Rica-, high-tech good exports are based on very low local integration and the innovative dynamic lies essentially beyond the countries' borders, factors which strongly limit the impact of that export activity on the rest of the economy.

There are also differences in the region as to the insertion level into GVCs – much higher in the case of Central America and the Caribbean. The participation in GVCs might be, a priori, a positive factor for developing countries' growth. On the one hand, global production networks are an important channel to "easily" increase share in international markets – relative to the situation of a company that has to strike it out on its own to compete abroad – and it also allows for indirect internationalization of local companies related to companies taking part in GVCs in a direct fashion. On the other hand, from a microeconomic perspective, local companies' participation in GVCs helps strengthen their competitiveness, since they have to face a stricter demand (learning by exporting) and, additionally, it may stimulate the development of new learning processes resulting from the relations established with other agents in the chain (learning by interacting). However, these potential advantages do not seem to materialize clearly in Latin America's case, since the prevailing ways of insertion into GVCs, based on maquilas, free-processing zones, etc, gave rise to structures in which the region's countries specialize in labor-intensive stages in the value chain, based primarily on financial advantages –instead of on local capabilities development– and that act as enclave models whose fruit are not transferred to the rest of the economy. Also, such structures are subject to threats of relocation towards other low labor-cost countries, turning them very dependent on the existence of relatively high transportation costs for certain goods and/or tariffs preferences. In fact, for national capital firms to enter GVCs is more difficult and, once in them, they are subject to high pressures of costs, time, quality, etc to keep their place. Meanwhile, for TNCs' affiliates the entry is obviously easier, but they are usually less linked to the rest of the host countries' economy.

In sum, to put it in more informal terms, Latin America participates "little and badly" in GVCs: only a few countries take part in such chains and, in addition, they do it in lower added value links, which, in addition to the low national integration and the lack of internalization of a dynamic innovative nucleus, it weakens potential spillovers to national economies. The causes supporting these trends are varied and range from factors inherent in the international scene (trade

restrictions in destination markets, TNCs' strategies, GVCs' governance forms), among others, to others, probably more relevant, belonging in the local/regional sphere (low number «multilatinas» with scarce technological dynamics, weak institutions, heterogeneous production and social structures, scarce human capital and not very oriented to disciplines linked to the production and technology world, unarticulated National Systems of Innovation, lack of public policies that stimulate competitiveness and technological improvement).

In any case, what we have attempted to show is that a more solid macroeconomic policy and the preservation of high and “competitive” foreign exchange are hardly sufficient conditions per sé (albeit they are surely necessary) to improve Latin America's pattern of insertion into the global economy in such a way that such insertion constitutes a positive factor for economic and social development goals in the region's countries. Today Latin America faces a higher challenge than in the past to reach this goal, since it must find its “place” after the China's entry into the global economy. In particular, the region's countries should promote the generation of conditions to become attractive locations for the development of activities that take part in GVCs, while they should seek to increase spillovers that might emerge from such activities and avoid being inserted permanently at stages in the chain in which competition lies exclusively in cost advantages (mainly low salaries).⁶⁷ In effect, static advantages, particularly those based on cheap labor, are no longer a good anchor to be part in trade and investment world currents. Meanwhile, the examples, still relatively scarce, of successful integration strategies based on highly-skilled human resources, or world class innovative capabilities show, luckily, that other roads are possible for the region's economies.

In this sense, microeconomic study programs that might both go deeper into the knowledge of successful cases already consolidated, and discover others that might potentially become new “stars” in the region's economies, constitute a basic input for the design of policies aimed at consolidating such successful cases – as well as increasing externalities towards the countries of origin – and, a fundamental task, generate the necessary conditions for many other similar cases to emerge, gradually leading to a radical change in the way the region is inserted into the world economy.

In order to reach this goal, several conditions should exist. In the first place, it is precise to reach “shared views” on which are the desirable development strategies. In other words, the State, the business world and the academic sector should reach consensus on the need to transform the region's countries' production structures and specialization patterns. Also, it should be taken into account that successful cases currently present in the region are the result of long evolution processes in which different types of public policies and private initiatives are combined. This means that the necessary changes will not be immediate nor should they only come from the market actions or policies designed in technocratic ways designed by “enlightened” bureaucrats. Finally, the tasks to be addressed involve making headway in international negotiations about trade and investment – seeking to lift potential protectionist barriers in third parties and implement the leeway to carry out some policies which are today limited in the framework of the WTO, but that may be important to reach the development goals set in this paper –, as, basically, in the local transformations necessary to generate the conditions to change the specialization patterns and facilitate the upgrading patterns in the GVCs for local firms. As we said before, the existence of successful cases of integration into the world economy in the region shows that the weaknesses of the current specialization pattern are far from being inevitable. We believe, therefore, that a positive change is possible and that the factors mentioned in the last paragraphs, along with other initiatives in the same direction, might help the integration into the world economy to give better results for Latin American countries than those reaped so far.

⁶⁷ In fact, the entry into the GVCs can initially take place via low salaries, and then go through a learning process that allows “working the way up” through the complexity of the activities that are developed in a given country. However, as we could see in this paper, this process is not that easy to reach. Also, in Latin America's case, in fact, is just about impossible, especially in the most developed countries in the region, to compete by means of low salaries in the face of the emergence of China, India, Pakistan, Vietnam, etc as global exporters.

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Appendix

Table A1
FDI PROJECTS AIMED AT EXPORTS IN THE IT AREA,
BY DESTINATION COUNTRY, 2002-2003

	Call Centres (a)	%	Shared Service Centers (b)	%	IT (c)	%	HQs Region. (d)	%	Total	%
India	60	11.7	43	30.9	118	18.7	7	1.2	228	12.3
The United Kingdom	43	8.4	7	5.0	73	11.6	64	11.3	187	10.1
China	30	5.8	4	2.9	60	9.5	38	6.7	132	7.1
The United States	15	2.9	2	1.4	26	4.1	80	14.2	123	6.7
Canada	56	10.9	3	2.2	14	2.2	25	4.4	98	5.3
Singapore	16	3.1	8	5.8	35	5.5	36	6.4	95	5.1
Germany	20	3.9	1	0.7	34	5.4	22	3.9	77	4.2
Ireland	29	5.7	19	13.7	14	2.2	15	2.7	77	4.2
United Arab Emirates	13	2.5	--	--	12	1.9	31	5.5	56	3.0
Hong kong	2	0.4	--	--	14	2.2	37	6.5	53	2.9
Malaysia	16	3.1	6	4.3	8	1.3	17	3.0	47	2.5
France	13	2.5	2	1.4	16	2.5	11	1.9	42	2.3
Hungary	11	2.1	7	5.0	4	0.6	4	0.7	26	1.4
The Philippines	12	2.3	1	0.7	9	1.4	4	0.7	26	1.4
Brazil	6	1.2	--	--	9	1.4	6	1.1	21	1.1
Czech Republic	9	1.8	6	4.3	5	0.8	--	--	20	1.1
Poland	3	0.6	5	3.6	4	0.6	3	0.5	15	0.8
Russia	1	0.2	1	0.7	4	0.6	2	0.4	8	0.4
Romania	1	0.2	--	--	2	0.3	4	0.7	7	0.4
Costa rica	4	0.8	1	0.7		0.0	--	--	5	0.3
Slovakia	4	0.8	--	--		0.0	--	--	4	0.2
Argentina	2	0.4	--	--	1	0.2	--	--	3	0.2
Israel	--	--	--	--	2	0.3	--	--	2	0.1
Bulgaria	1	0.2	--	--		0.0	1	0.2	2	0.1
Latvia	--	--	--	--	1	0.2	1	0.2	2	0.1
Lithuania	1	0.2	--	--		0.0	1	0.2	2	0.1
Uruguay	--	--	--	--	1	0.2	--	--	1	0.1
Belarus	--	--	--	--	1	0.2	--	--	1	0.1
Estonia	--	--	--	--	1	0.2	--	--	1	0.1
Serbia and Monte.	--	--	--	--	--	0.0	1	0.2	1	0.1
Rest	145	28.3	23	16.5	164	25.9	155	27.4	487	26.3
Total	513	100.0	139	100.0	632	100	565	100.0	1 849	100.0

Source: UNCTAD (2004).

(a) It includes back office and help desk services, claim management, technical support, post-sale services, IT services, etc.; (b) It includes data management, accounting and administrative services, customer and supplier management, logistics, IT outsourcing, quality control, etc.; (c) It includes software development, application testing, content development, product engineering, design and optimization; (d) Regional coordination centers and headquarters.

Table A2

**THE TEN MOST DYNAMIC PRODUCTS IN THE WORLD TRADE
AND LATIN AMERICA'S PARTICIPATION, 1992-2003**

Product	Growth rate (percentage)	Latin American countries where these lines are part of the top 10 export products
Optical instruments and apparatus	15.9	-
Medical and pharmaceutical products	12.8	Costa Rica
Optical articles, non-specified.	11.5	-
Telecommunications equipment, non-specific., and parts, non-specific. and accessories of machines and equipment from chapter 76	11.2	Mexico
Hot cathode, cold cathode and photocathode lamps, tubes and electronic valves	11.0	-
Natural and artificial gas	10.5	Argentina
Organomineral and heterocyclic compounds	10.3	-
Silver, platinum and other platinum group metals	9.8	Peru
Essential oils, aromatizing and soporific substances	9.7	-
Parts, non-specified, and parts recognizable as exclusive or mainly destined to machinery and equipment from groups 751 o 752	9.5	Costa Rica
Total world trade	5.7	-

Source: own based on UNCTAD data.

Table A3
THE MOST DYNAMIC EXPORT PRODUCTS
IN THE WORLD MARKET BY COUNTRY, 2003^a

Country and product	Growth rate in the world market
ARGENTINA	
Crude petroleum oils obtained from bituminous minerals	7.5
Oil-derived products, refined oil products	7.2
Natural and artificial gas	10.5
Passenger automobiles, including vehicles destined for the transport of both passengers and freight	6.4
BRAZIL	
Passenger automobiles, including vehicles destined for the transport of both passengers and freight	6.4
Crude petroleum oils obtained from bituminous minerals	7.5
Parts and accessories, non-specified, of automobiles	6.0
CHILE	
Alcohols, phenoles, phenoles-alcohols and halogenated, sulfonated, nitrated or nitrosated by-products	5.7
COLOMBIA	
Crude petroleum oils obtained from bituminous minerals	7.5
Oil-derived products, refined oil products	7.2
Polymerization and copolymerization products	5.8
COSTA RICA	
Parts, non-specified, and accessories recognizable as exclusive or mainly destined to machines and office machines	9.5
Instruments and medical equipment, non-specified	9.1
Medical and pharmaceutical products	12.8
Knit or crochet underwear	7.2
Machines and electrical appliances, non-specified	6.7
MEXICO	
Crude petroleum oils obtained from bituminous minerals	7.5
Passenger automobiles, including vehicles destined for the transport of both passengers and freight	6.4
Machines for automatic database elaboration and its units; magnetic or optical readers, machines to record codified data and machines to elaborate such data, non-specified.	8.5
Telecommunications equipment, non-specified, and its parts and accessories	11.2
Automobiles parts and accessories, non-specified	6.0
Electricity material distribution	7.3
Machines and electrical appliances, non-specified	6.7
Electrical apparatus for circuit connection, cut, and protection	7.9
PERU	
Fodder (except unmilled cereals)	7.2
Oil-derived products, refined oil products	7.2
Crude petroleum oils obtained from bituminous minerals	7.5
Silver, platinum and other platinum group metals	9.8
Non-elastic, knit or crochet clothing and accessories	5.9
URUGUAY	
None	

Table A3 (continuation)

Country and product	Growth rate in the world market
VENEZUELA	
Crude petroleum oils obtained from bituminous minerals	7.5
Oil-derived products, refined oil products	7.2
Alcohols, phenoles, phenoles-alcohols and halogenated, sulfonated, nitrated or nitrosated by-products	5.7
Other organic chemicals	6.8

Source: Own on UNCTAD data.

^a products –the 10 top export ones in each country- whose growth rate in the world market exceeds the average for all goods (5,7% annual, 1990-2003).



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