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Far from Champions, close to Midgets International Production Sharing in Central and South America

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Abstract

This paper assesses the relative participation of Argentina, Brazil, Guatemala and Nicaragua in fragmented world production. Based on trade statistics from 2000 to 2004, it analyses whether the trade flows of these economies have evolved towards production sharing schemes and how great this type of trade is in order to sustain their presence into the world economy. Guatemala and Nicaragua hold a moderate participation in a global production chain under a North-South trade pattern. Nonetheless, their participation is threatened by international competition and their dependence on a unique market. Brazil has consolidated participation into few chains of production showing a more diversified North–South trade pattern. Argentina has attained insertion into the automotive chain of production whereas its participation in other ones is still limited. The country has a more South-South trade pattern, which exposes it to a certain degree of dependence.

Keywords: Sharing production, Fragmentation, Trade in parts and components, Outsourcing.
JEL classification: F10, F23, L23.

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Resumen

En este trabajo se evalúa la participación relativa de Argentina, Brasil, Guatemala y Nicaragua en la producción segmentada. En base a estadísticas de comercio exterior (2000–2004), se analiza si el comercio de estas economías han evolucionado dentro de cadenas globales de producción y cuán grande este tipo de comercio es a efectos de mantener su presencia en la economía mundial. Siguiendo un patrón de comercio Norte-Sur, Guatemala y Nicaragua mantienen una moderada participación en una cadena global de producción. Sin embargo, su participación está amenazada por la competencia internacional y por su dependencia en un solo mercado. Brasil ha logrado participación en varias cadenas de producción, mostrando un patrón de comercio Norte-Sur más diversificado. Argentina ha logrado inserción en la cadena de producción automotriz mientras que su participación en otras cadenas es aún limitada. Su patrón de comercio Sur-Sur lo expone a un cierto grado de dependencia.

Palabras clave: Producción compartida, segmentación, comercio de partes y componentes, tercerización.

Código JEL: F10, F23, L23.

I. Introduction

A productive structure in which manufacturing or services activities developed at home are combined with those performed abroad, usually in more than one place, has been broadly named "International Fragmentation". An example can be provided by the textile and apparel industries in advanced countries which have shifted their unskilled labor processes towards developing countries, keeping design and distribution at headquarters. Further examples can be found in high-technology sectors such as electronics, pharmaceutics and automobiles.

Nonetheless, there is not a standard denomination in the literature for this phenomenon. Sanyal & Jones (1982) have called as middle products the pair of inputs entailed for the production of final goods - those available in the national markets and those obtained abroad. Yeats (2001) and Kimura & Ando (2005) used *production sharing* to refer to the internationalization of a manufacturing process in which several countries participate at different stages of the manufacturing process of a specific good. Likewise, terms such as super-specialization, vertical integration and outsourcing constitute

other examples by which it has been denominated in the literature (see Arndt, 1998; Hummels *et al*., 2001; Feenstra *et al*., 1998).

The expansion of international fragmentation of production along with globalization has gained substantial attention since the last decade. It has led to a body of research aimed at finding the causes, content and effects of production fragmentation. By investigating the forces that might have underpinned its expansion, Athukorala & Yamashita (2006) pointed out that the advances in production technology, innovations in transports and communications and the liberalization and trade reforms undertaken by many countries can be considered as the three main facts which have lowered service-linked costs and created new opportunities for extending product fragmentation across national frontiers.

Likewise, a number of researchers have studied several aspects involved in the process. Jones & Kierzkowski (2005) took into account the geographical dimension. They emphasized the role of transport costs and service linkages and their contribution to international outsourcing, as compared to production within the borders of a single economy. Van Long *et al*. (2005) explored the role that services might play in limiting fragmentation. In their study, they pointed out that to produce components (fragmentation) and connect them with other production blocs, an economy needs both manufacturing labor and services. As the number of services an economy can offer depends on its size and stage of development, it can be argued that the greater the range of services an economy has, the more efficient its production of components is. Nonetheless, in a country with a greater range of services they may be more expensive, perhaps due to higher labor cost. Therefore, the trade-off between scope in the supply of services and their individual cost determines what types of components will be produced in which country. Grossman & Helpman (2002) explored outsourcing decisions in a global economy framework. According to their model, such decisions are linked to three main features of the modern outsourcing strategy: (a) searching for partners, (b) convincing potential suppliers to customize products in accordance with the needs and (c) relationship-specific investment, governed by incomplete contracts. Thus, the extent of international outsourcing will depend on the thickness of the domestic and foreign market for input suppliers, the relative cost of searching in each market, the relative cost of customizing inputs and the nature of the contracting environment in each country.

Several studies have emphasized that the phenomenon raises implications which are relevant from a policy point of view. The existence of differences in factor prices across national borders is one of the main forces on a firm's outsourcing decision. Thus, as firms in developed countries tend to shift their unskilled-labor stages of production towards developing countries abundant in this factor, fragmentation may drive changes in the pattern of trade, by enhancing integration of these very developing countries into the world economy. A number of works have addressed the effects that fragmentation might have on the wages of unskilled workers in developed countries. Feenstra (1998) has pointed out that domestic employment is affected when firms decide to source their production overseas. Moreover, it will impact differentially the wages of unskilled and skilled workers. As unskilled labor in a developed country is relatively more expensive than abroad, the outsourced activities will be those that use a large amount of unskilled labor and, consequently, this will shift down the demand of unskilled relative to skilled labor within an industry. Yet, trade (through international fragmentation) and technology are complementary rather than competing explanations for the change in employment and wages. Yomogida (2006) studied the effect of fragmentation on welfare for the case of developed countries. He argued that though a firm might benefit when it decides to move its production overseas, the firm's private decision not necessarily benefits the economy as a whole.

In a sense, all these implications underline the key role that sharing production has for the development of those economies not yet participating in it. Actually, to get involved in any world fragmented chain of production represents a great challenge for any country and even more for those small developing economies whose opportunities are more limited. The lack of insertion in sharing production processes reduces their growth and industrialization opportunities, whilst their inclusion will provide more sustainable growth paths. Measuring the relative importance that sharing production has for any developing country constitutes a relevant issue, since it will provide some useful insights for policy design.

This study assesses the importance of shared world production for four Latin American economies: Brazil, Argentina, Guatemala and Nicaragua, using trade data from 2000 to 2004. All experienced trade liberalization reforms and engaged in different regional trade agreements during the last few decades. Nevertheless, each has developed different trade structures. Size and specialization also varies considerably among them. Assessing their

insertion into international production sharing schemes leads us to inquire how and to which extent are they actually involved in sharing production? Other relevant questions are: How great is their participation in international production-sharing activities? Do parts and components hold representative shares on exports and imports as well?

The paper is structured as follows. Section 2 provides an overview of the empirical studies aimed at measuring fragmentation, followed by a short description of the methodological strategy. Section 3 gives a brief background of each Latin American economy. The core of the paper is Section 4, which discusses the empirical evidence and provides some perspectives and policy remarks. Section 5 concludes, taking into account the perspectives for those economies remaining outside international fragmentation.

II. Measuring Fragmentation

Empirical literature focusing on measuring fragmentation is still quite limited. Most of the available studies based their analysis on trade in intermediate inputs. Feenstra (1998) investigated fragmentation developments with special attention to the US. In doing so, the author used three methods to measure the relative importance of fragmentation. The first approach requires a reclassification of the trade data using the "end-use" categories of the Broad Economic Activities (BEA). As these categories assign goods according to their use by purchasers rather than by their production process, this reclassification enables to determine the bulk of trade that occur through industries and activities linked to fragmentation as well as to analyze its evolution through time. A second method quantifies imports of intermediate inputs within each industry. Input purchases data can be used to estimate imported intermediate inputs by industry.[1] These estimated values can then be expressed relative to total intermediate inputs purchases. The third approach refers to the vertical specialization index proposed by Hummels *et al*. (1997), which is equal to the fraction of the total trade accounted by inputs that are both imported and then embodied in exports. By using all these measures, the author found that OECD countries had witnessed an increasing use of imported inputs as well as a reduction of domestic production activities.

Jones *et al*. (2005) added empirical evidence on the rapid expansion of international trade in parts and components. According to the au-

1. It can be computed by multiplying the purchases of each type of input and its respective share in the economy. The obtained values are then aggregated by each industry.

thors, fragmentation does not depend on a particular market structure as its expansion occurs within a perfect competition structure as well as in a monopolistic one. The optimal degree of fragmentation depends on the size of the market and lowering service-linked costs promotes fragmentation. Under these considerations, the authors estimated an equation in which trade in parts and components of a particular region is explained by the size of the market, measured by the GDP, and service costs. The latter is measured by the average of business telephone charges. Their results depict indeed that international outsourcing has become a key feature of globalization, with the increase of trade in parts and components having surpassed the expansion of intra-industry trade.

In the context of the Asian economies, Lemoine & Unal-Kesenci (2004) explored the assembly trade developments of China by reclassifying China's trade data by stage of production. As country's exports may have high(low) imports content, the authors measured China's revealed comparative advantages using the Contribution Trade Balance index (Lafay, 1994). The authors found that China's international trade is enormously linked to world fragmented production processes. China's specialization in assembly trade has enhanced the growth of its competitive manufacturing sector, which constituted the main channel for technology transfers.

Kimura & Ando (2005) used finer disaggregated trade data and micro-data of Japanese firms to investigate the international production (distribution) networks in East-Asia. Their study focuses on three main aspects: (a) the relative importance of trade in machinery goods and parts and components; (b) the characteristics of the Japanese firms and (c) the corporate firm's behavior from the viewpoint of firms affiliated abroad. The latter is analyzed by computing the share sales/purchases of a number of Japanese affiliates in East Asia. Their results reveal that geographic distance and uncontrollability are the two axes of fragmentation in East Asia. Moreover, in both axes, service linkages seem to be the key in the development of production networks.

Based on the decomposition-type threshold method proposed by Fontagné and Freudenberg (1997), Ando (2006) examined developments in the East Asian trade structure. This method –which is an extension of an earlier threshold method (Ab-el-Rahman, 1991)- splits total trade up into three categories, namely, one-way, vertical intra-industry and horizontal intra-industry trade. The author found that the relative importance of vertical intra-industry trade has greatly increased, whilst that of one-way trade has

drastically shrank reflecting the fact that production sharing has become an essential feature of the East Asian economies. Following Yeats (2001) and Athukorala (2003), Athukorala & Yamashita (2006) also analyzed the nature, trends and patterns on fragmentation trade with special attention to East Asian economies. Their study comprises more recent and detailed UN trade data. Apart from evidencing a substantial expansion of fragmentation, they found that the degree of dependence on sharing production is proportionately larger in East Asia than in North America and Europe.

A common characteristic of the above studies is that they have focused on developed countries or East-Asian developing countries, giving little attention to Latin American economies.[2] This might be explained by the fact that most statistical systems fail in compiling trade under a value-chain perspective. In fact, measuring fragmentation entails finer trade data, and a number of the empirical studies previously mentioned have used not only standard international trade statistics but complementary trade data not generally available for developing countries. Görg (2000) used data from the Outward Processing Trade in EU and Feenstra *et al*. (1998) used the US Offshore Assembly Program data to capture trade under custom arrangements in which complete/partial tariff exception or levy reductions are granted in accordance to the domestic input content of imported goods. Yeats (2001) used both international trade statistics - SITC 7 revision 3- and the Offshore Assembly Processing (OAP) data to assess the magnitude and nature of global production sharing.

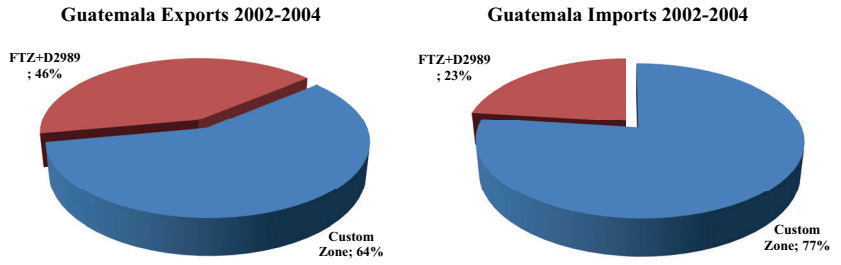
In spite of the limitations imposed by the lack of complementary trade statistics, we succeeded in assessing fragmentation for four Latin American economies. To accomplish this, we followed Yeats (2001)'s methodology, which can be applied to the available trade data. With the help of OAP data, Yeats (2001) compared trade in parts and components with that in final products, in order to assess the magnitude of global production sharing. In the absence of OAP-like information, we focus not only on parts and components comprised under the SITC-7 rev.3 group, but also on those SITC product groups classified as semi-finished products that are used as inputs in fragmented production of manufactures. Using a revised version of the Broad Economic Categories (BEC), we reclassified SITC products into categories corresponding to their intermediate or final use. Moreover, in order to identify the stage of production that any SITC products is related

2. Fontagné *et al*. (1999) addressed fragmentation in the automotive and electronics sectors in Asia and Latin America.

with, we also classified them by stage of production, following the classification proposed by Lemoine & Unal-Kesenci (2004).[3] Three stages of production were considered: (a) primary goods (I); (b) intermediate goods, split up into two categories: semi-finished products (II) and parts and components (III); (c) final goods which also split into two categories: capital goods (IV) and consumption goods (V).

We used COMTRADE statistics from 2000 to 2004, available up to five-digits of the SITC rev.3 classification. Nevertheless, in the case of Guatemala and Nicaragua, COMTRADE datasets do not include trade flows from special trade regimes. This unreported data is related to assembling trade and hence highly relevant for purposes of this paper. To deal with this issue, additional trade statistics disaggregated by trade regimes were gathered for the case of Guatemala. These were provided by the Bank of Guatemala (BANGUAT) but only from 2002 to 2004.[4] Further comparison between both datasets showed that only trade made through Guatemala's customs territory regime was reported by COMTRADE whilst trade effectuated through Free Trade Zone (FTZ) and the Decree 2989 (D2989) regimes were unreported. Moreover, the percentage of unreported data was relatively significant. As Figure 1 shows, export from Guatemala's customs territory held only 54% of total Guatemalan exports during 2002-2004, while exports from FTZ and D2989 regimes held 46% of total exports during the same period.

Figure 1
Guatemala. Unreported trade data



Data source: Authors' estimations based on COMTRADE and the Bank of Guatemala databases

Also, it is worth mentioning that trade statistics from BANGUAT were available up to eight-digits of the Central American system nomen-

3. See Annex 1 for more details on the classification adopted.

4. The Bank of Guatemala began to report trade statistics by each trade regimen (special trade regimes included) since 2002. Trade statistics before 2002 comprises only those exports and imports made through Guatemala's customs territory.

clature (SAC, Spanish acronym). This classification system is based on the Harmonized Commodity description and coding system of 2002 (HS-2002). More specifically, the first six-digits of the SAC classification correspond exactly to the HS-2002 codes. Accordingly, the BANGUAT dataset has then been reclassified into the SITC rev.3 codes, using a correspondence table between HS-2002 and SITC rev.3 classifications.

For Nicaragua, the analysis is based only on COMTRADE, since we could not gather similar detailed statistics, despite the efforts made.[5]

III. A glance at the four Latin American economies

Brazil and Argentina are the biggest members of Mercosur. Both countries underwent liberalization programs during the late eighties, initially on a unilateral basis. Subsequently, they decided to intensify their liberalization reforms through a bilateral agreement. Later on, Argentina, Brazil, Paraguay and Uruguay decided to firm the Treaty of Asunción, creating the Southern Common Market (Mercosur).

Brazilian trade reforms led the country to expand gradually its international trade. According to the World Trade Organization, WTO (2004), Brazil –characterized by having a large and well developed agricultural, mining and services sectors - is expanding its presence in world markets. During 2000-2003, it attained the highest degree of openness in its post-war history. The average openness[6] ratio has risen from 18.1% during 1996-1999 to 27.3% during 2000-2003. The WTO also highlights that Brazil has diversified its trade partnership to regions hitherto with a rather small share in its trade flows. Moreover, the country has continued reinforcing its trade liberalization policies, independently as well as a Mercosur member.

Brazilian trade policy has focused on strengthening the expansion of trade in industrial goods.[7] Automobiles, aircrafts and shipbuilding have

5. It was not possible to define the percentage of unreported data for the case of Nicaragua. Up to our knowledge detailed trade statistics by free trade zone regime are recorded since 2002 by the National Commission of Free Zones (CNZF) and by the Dirección General de Aduanas (DGA), but only general statistics are available.

6. Openness is defined as the ratio of export plus imports of goods and services divided by the GDP

7. Brazil's diverse industries range from automobiles, steel and petrochemicals to computers, aircraft, and consumer durables trade.

benefited from specific support programs. Moreover, Brazil has become a world-class manufacturer of selected products, like motor vehicles, aircraft, and certain electronic products and machinery and equipment.

Argentina experienced an economic boom during the nineties, with significant GDP growth rates, control of the inflation rate and broad market reforms, including liberalization, deregulation and privatization. Nevertheless, by the end of the decade, several external and internal crises drastically affected the country. Recession began to unfold, with GDP experiencing a fall. By the end of 2001, the economic recession turned into a severe financial crisis. To alleviate the impact of the crisis, the government pursued extreme policy measures. All bank deposits were frozen; the country defaulted on external debt and repealed the convertibility of the national currency and devaluating it. With a more competitive and flexible exchange rate, new policies based on re-industrialization, the increase of exports, and consistent fiscal and trade surpluses were implemented. By the end of 2002, the economy began gradually to recover. GDP grew by a sustainable annual rate of 9% during 2003 and 2004. At the same time, exports and imports also increased significantly.

Guatemala and Nicaragua are former members of the Central American Common Market (CACM). Guatemala is both the largest country and economy of Central America, with a population of 12.29 m and a GDP of US$ 27.39 bn in 2004. Nicaragua, with a GDP of US$ 4.49 bn and a population of 5.49 m in 2004, is, after Haiti, the second poorest economy in the region. The two countries underwent years of severe political issues, which ended only during the last decade.[8] Since then, both have undertaken important steps to enhance growth, as well as their insertion into the world economy.

Guatemala's economy is based mainly on agriculture[9]; the main economic sector in terms of output, employment and trade. In 2005, it accounted for about 22% of GDP. Manufacturing accounted for 12.4% 2005[10], down from 13.2% in 2000, evidencing that even though its value-added in real terms has increased, the relative share of this sector in total GDP has steadily decreased during the current decade. Yet, processed agricultural products for

8. Guatemala suffered more than 36 years of internal conflicts which formally ended with the signature of the Peace Accord at the end of 1996. On the other hand, Nicaragua endured a Sandinista Regimen for 12 years which ended at the beginning of the nineties with the defeat of the Sandinistas by a coalition of Anti Sandinistas.

9. It also includes forestry, fishing and hunting activities.

10. Based on statistics from the Bank of Guatemala.

domestic and overseas markets represent the main output of Guatemalan industry. In a minor scale, export-oriented products such as textiles, footwear and chemicals constitute other representative industries within the manufacturing sector.

The Guatemalan administration has encouraged the growth of export-oriented industries during the last few years. In this regard, Guatemalan trade policy sought to promote a competitive market, where producers are positioned according to their productivity, as well as strategies to intensify its international insertion. The Maquila law (D 29-89)[11] and the Free Trade Zones Law[12] are among the key trade measures undertaken by the government. Trade of intermediate goods, machinery and parts and components greatly benefited from them. Information provided by the Ministry of Economy indicates that, in November 2005, there were 554 active firms benefiting from the assembly law and another 185 firms operating in free trade zones. Of these, 324 were engaged in the production of clothes and apparel, and 129 in manufactured products. Other important activities included the production of plastics, pharmaceutics and chemicals as well as the commercialization of agricultural products.

Nicaragua is also characterized by being an agricultural economy with a small manufacturing base. Around 36% of the land area is devoted to agriculture and livestock, and manufacturing accounts for around 18% of GDP. The WTO highlights in its report on Nicaragua that a large part of the manufacturing sector is composed of industries which produce foodstuff and beverages, mainly made from meat, milk and sugar. Furniture and footwear are also representative within the manufacturing sector. In 2002, they accounted for 413 and 212 firms, respectively. Yet, textiles and wearing apparel constitutes a dynamic growing sector. The enlargement of this sector - which uses unskilled labor and low technology – has been enhanced by the Free Trade Zones regime, the preferential treatment (zero duties) granted, in the framework of CAFTA, for some textiles and wearing apparel in the US market and also the comparatively low labor cost the country enjoys in the region. The automotive industry is still rather small, with only 80 of 3467 firms in 2002 producing parts and components for vehicles, with a value-added of 0.6 %.

11. The main purpose of the Maquila law (Decree 29-89) was to promote and develop the Maquila and exporting activities in Guatemala. Likewise, The Free Trade Zones (Decree 65-89) aimed at promoting exports and foreign and domestic investments as well as employment and technology transfer.

12. Central American Free Trade Agreement.

IV. Evidence of fragmentation

We start by inspecting the composition of each country's trade structure, identifying which stage of production their trade flows are associated with. There are two reasons for doing this. First, a country might be involved in a stage of the production process that uses more intensively semi-finished goods rather than parts and components. Second, the SITC-7 category includes mostly parts and components for machinery and transport industries; nevertheless, industries such as chemicals, apparel and textiles, footwear and so forth require also semi-finished products not comprised under the SITCT-7 category. Table 1 depicts the composition of trade by broad groups of products and stage of production.

As regards Argentina, except for 2004, intermediate products constitute by far the foremost category in both exports and imports (70% of total exports and 64% of total imports, in 2003), with semi-finished products being the most representative sub-group. The share of parts and components oscillates around 6% of total exports, whilst its relative participation in total imports has decreased. For final goods, those for consumption (sub-group V) have fairly increased their relative participation in exports, while within total imports it has greatly decreased. The substantial significance of both intermediate and final goods in the Argentine trade structure suggests that its manufacturing sector is linked to fragmented chains of production, a point to be further checked.

Intermediates also represent the most important category in the Brazilian trade structure. On the export side, their relative importance has slightly decreased (from 61% in 2000 to 58% 2004); on the import side, an increasing participation is noticeable (from 65% in 2000 to 70% in 2004). Although exports in parts and components make around 12% of total exports, semi-finished products remain the most important sub-group within this category. Consumption goods (sub-group V) are the most representative subgroup within exports of final goods. A comparison between exports shares of Argentina and Brazil indicates that capital goods (sub-group IV) hold a relatively greater participation in Brazil, suggesting that the Brazilian manufacturing sector would be more connected to high-tech production chains than Argentina.

Table 1
The four Economies: Trade Pattern by Stage of Production

				2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
ARGENTINA	Primary		I	2.5	2.1	1.8	1.6	1.4	1.4	1.4	2.6	2.1	1.2
			II	58.6	61.1	62.5	64.6	61.9	34.5	37.5	49.9	46.4	25
	Intermediates		III	6.5	5.8	5.9	5.4	6.1	19.9	18.9	19.3	17.8	11.7
			IV	7.4	7.3	6.6	4.7	5.4	24.4	20.7	14	19.1	53.5
	Final Goods		V	23.9	22.5	22.1	22.7	24.1	19	20.3	13.3	13.6	7.4
BRAZIL	Primary		I	5.9	4.8	4.9	4.6	4.5	2.3	2.4	3.1	3.3	3.9
	Intermediates		II	48.4	47	47.7	48.5	46.7	37.9	38.2	37	39.4	40.7
			III	12.5	12.2	11.8	11.6	11	26.8	26.8	27.1	28.6	29.6
	Final Goods		IV	11.8	11.7	11.3	11.4	13.8	18.9	22.8	21.7	18.1	16
			V	20.1	23.3	23.1	22.8	23.2	13	8.5	9.7	9.1	8.8
NICARAGUA	Primary		I	14.4	34	23.5	27.6	32.4	1.5	1.2	1.6	1.3	1.1
	Intermediates		II	18.5	20.7	24.4	18.7	19.8	33.4	32.9	30.6	33.6	35.7
			III	0.1	0.2	1.6	0.2	0.3	7.2	8	7.1	7	6.7
	Final Goods		IV	1.9	0.8	2.7	0.7	0.5	21.1	19.4	23.4	21.6	19.1
			V	64.3	43.8	47.3	52.3	46.5	35.8	37.5	36.3	35.5	36.4
GUATEMALA	Primary	I	C. Zone	32.8	21.4	9.3	10	9.8	1.8	2	1.3	1.4	1.2
			FTZ+2989*/			1.2	1.3	1.3			0.3	0.4	0.4
	Intermediate	II	C. Zone	28.8	38	15.8	18	17.6	39.3	40.8	32.8	28.8	29.1
			FTZ+2989*/			4.8	4.4	4.9			21.8	22.8	24
		III	C. Zone	0.6	0.9	0.6	0.6	0.5	10.3	9.1	5.8	5.7	5.5
			FTZ+2989*/			0.2	0.2	0.3			0.4	0.4	0.6
	Final Goods	IV	C. Zone	2.1	2.4	1.3	1.3	1.4	23.7	18.8	14.3	14.7	14.6
			FTZ+2989*/			0.4	0.5	0.5			1.1	1	1.4
		V	C. Zone	34.7	36.4	15.4	16.8	16.1	24	28.2	18.5	19.8	19
			FTZ+2989*/			50.9	46.9	47.6			3.7	4.9	4.2

*/ Guatemalan trade data by special regimens is not available for this year

a/ I : Primary goods; Intermediate goods: II:semi-finished products, III: Parts and Components; Final Goods: IV: Capital goods, V: consumption goods

Data source: Authors' calculations based on COMTRADE and the Bank of Guatemala databases

Nicaragua's trade structure is dominated by final goods, with consumption goods holding the most relevant shares in both exports and imports. However, the relative participation of semi-finished goods in imports is noticeable, whilst parts and components hold a relatively small share. On the exports side, the participation of primary goods has enormously increased -from 14% in 2000 to 32% in 2004-, indicating that the country maintains yet a high dependence on trade in traditional goods. Exports in parts and components are negligible; suggesting how poorly linked is the manufacturing sector to high-tech production chains, though perhaps highly connected to low-tech ones.

Guatemala's trade composition is a bit similar to Nicaragua's. The high relative participation of semi-finished goods in Nicaragua's imports along with the high share of final goods in its exports indicates the country is also connected to low-tech production chains. Guatemalan imports are mostly concentrated on intermediate goods, with semi-finished products taking an overwhelming share of 53% in 2004. The bulk of these imports enter the country through the two special customs regimes already mentioned, the free trade zone and Decree 2989, benefiting export-oriented industries. On the export side, final goods have the highest participation, mainly delivered through special customs zones. Contrary to Nicaragua, exports in primary goods show a decreasing participation, which evidences not only a substantial change in Guatemala's trade pattern, but also a major dynamism of its manufacturing sector.

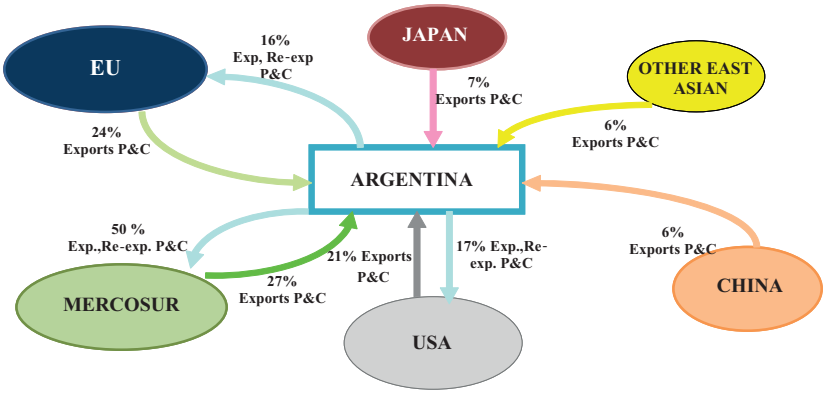
We now examine in more detail, the direction of trade in parts and components by regional blocs. By doing this, we can shed some light on whether the benefits/barriers imposed by partners have influenced the development of the trade patterns.

IV.1. The South American economies

Figure 2 shows the direction of trade in parts and components, for Argentina. A South-South trade pattern emerges, thanks to the large amount of trade with Mercosur, by far Argentina's leading partner in either imports or exports in parts and components. As Table 2a shows, the share of Mercosur in total Argentina's imports in parts and components increased steadily from 22% in 2000 to 27% in 2004. By contrast, the share of Mercosur in total Argentina's exports in parts and components decreased from 56% in 2000 to 44% in 2003, recovering in 2004 to 50%. Inside the bloc, Brazil stands as Ar-

gentina's major partner, which is not surprising as both countries have strong intra-industry linkages especially in the automotive sector.

Figure 2
Argentina, 2004: Direction of trade in parts and components by regional blocs



Source: Authors' estimations based on COMTRADE data.

Though the share of the European Union (EU) in Argentina's imports shows a decreasing path, it represents yet an important supplier of parts and components to Argentina. The EU accounted for 24% of total Argentine imports in parts and components in 2004, down from 31% in 2000. Exports to the EU slightly increased from 14% in 2000 to 16% in 2004. Inside the EU, Germany and Spain display the most representative shares in both imports and exports of 2004[13] (respectively, 7.8% and 4.1%, imports, and 4.9% and 5.6%, exports).

NAFTA represents the third supplier of parts and components, with 17% of total respective imports in 2004 (decreasing from 23 % in 2000). This lower figure is mainly explained by the fall of the US share, which recorded only 13.8% of total Argentina's imports in part and components in 2004, in sharp contrast with the 18.5% recorded in 2000. Likewise, Mexico shrank slightly its share from 2.2% in 2000 to 1.9% in 2004. On the export side, NAFTA kept a steady share of over 20% during the whole period, though Mexico decreased from 9.4% in 2000 to 6.8% in 2004.

13. Due to space considerations, tables containing indicators by major country partners are not provided here. However, these tables are available upon request from the authors.

Table 2a
Argentinian trade in parts and components, by economic blocs

	Blocs	2000	2001	2002	2003	2004
Exports in P & C (value in thousands $)	JAPAN	439	5136	4543	1642	1795
	CAN	21140	26137	22446	20400	43737
	CHINA	8613	1340	1993	4143	11539
	OTHER EAST ASIANb/	13615	34076	18738	1564	1623
	EU a/	139885	146576	159785	177265	196349
	MCCA	1862	1860	1993	2424	2844
	MERCOSUR	581289	446576	389141	395307	597791
	NAFTA	210948	182725	199586	225816	258099
	ROW	60109	58416	59196	73732	90115
Share %	JAPAN	0	0.6	0.5	0.2	0.1
	CAN	2	2.9	2.6	2.3	3.6
	CHINA	0.8	0.1	0.2	0.5	1
	OTHER EAST ASIANb/	1.3	3.8	2.2	0.2	0.1
	EU a/	13.5	16.2	18.6	19.6	16.3
	MCCA	0.2	0.2	0.2	0.3	0.2
	MERCOSUR	56	49.5	45.4	43.8	49.7
	NAFTA	20.3	20.2	23.3	25	21.4
	ROW	5.8	6.5	6.9	8.2	7.5
Imports in P & C (value in thousands $)	JAPAN	239847	275982	103624	142428	223500
	CAN	1979	2466	942	1824	3491
	CHINA	101738	125118	31343	105145	195259
	OTHER EAST ASIANb/	276264	238675	46550	98321	184864
	EU a/	1138325	746433	378711	472927	784036
	CACM	1356	3963	831	4523	14465
	MERCOSUR	805141	690767	330962	493301	838596
	NAFTA	783957	650705	273830	351819	522881
	ROW	301743	225781	124746	174105	344393
	Grand Total	3650350	2959890	1291539	1844392	3111485
Share %	JAPAN	6.6	9.3	8	7.7	7.2
	CAN	0.1	0.1	0.1	0.1	0.1
	CHINA	2.8	4.2	2.4	5.7	6.3
	OTHER EAST ASIANb/	7.6	8.1	3.6	5.3	5.9
	EU a/	31.2	25.2	29.3	25.6	25.2
	CACM	0	0.1	0.1	0.2	0.5
	MERCOSUR	22.1	23.3	25.6	26.7	27
	NAFTA	21.5	22	21.2	19.1	16.8
	ROW	8.3	7.6	9.7	9.4	11.1

Source: Authors' calculations based on COMTRADE databases

a/ From 2000 to 2003 "EU" includes EU-15 members. For 2004 It also considers the new member states of: Cyprus, Estonia Czech Republic, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia.

b/ "Other east Asian" includes the Association of Southeast Asian Nations(ASEAN4: Indonesia, the Philippines, Thailand and Malaysia), and Newly Industrializing Economies 4 (NIEs4: Taiwan, Korea, Hong Kong and Singapore).

*/ Share of total country's exports (imports) in parts and components

Table 2b
Brazilian trade in parts and components, by economic blocs

	Blocs	2000	2001	2002	2003	2004
Exports in P & C (value in thousands $)	JAPAN	439	5136	4543	1642	1795
	CAN	21140	26137	22446	20400	43737
	CHINA	8613	1340	1993	4143	11539
	OTHER EAST ASIANb/	13615	34076	18738	1564	1623
	EU a/	139885	146576	159785	177265	196349
	MCCA	1862	1860	1993	2424	2844
	MERCOSUR	581289	446576	389141	395307	597791
	NAFTA	210948	182725	199586	225816	258099
	ROW	60109	58416	59196	73732	90115
Share %	JAPAN	0	0.6	0.5	0.2	0.1
	CAN	2	2.9	2.6	2.3	3.6
	CHINA	0.8	0.1	0.2	0.5	1
	OTHER EAST ASIANb/	1.3	3.8	2.2	0.2	0.1
	EU a/	13.5	16.2	18.6	19.6	16.3
	MCCA	0.2	0.2	0.2	0.3	0.2
	MERCOSUR	56	49.5	45.4	43.8	49.7
	NAFTA	20.3	20.2	23.3	25	21.4
	ROW	5.8	6.5	6.9	8.2	7.5
Imports in P & C (value in thousands $)	JAPAN	239847	275982	103624	142428	223500
	CAN	1979	2466	942	1824	3491
	CHINA	101738	125118	31343	105145	195259
	OTHER EAST ASIANb/	276264	238675	46550	98321	184864
	EU a/	1138325	746433	378711	472927	784036
	CACM	1356	3963	831	4523	14465
	MERCOSUR	805141	690767	330962	493301	838596
	NAFTA	783957	650705	273830	351819	522881
	ROW	301743	225781	124746	174105	344393
	Grand Total	3650350	2959890	1291539	1844392	3111485
Share %	JAPAN	6.6	9.3	8	7.7	7.2
	CAN	0.1	0.1	0.1	0.1	0.1
	CHINA	2.8	4.2	2.4	5.7	6.3
	OTHER EAST ASIANb/	7.6	8.1	3.6	5.3	5.9
	EU a/	31.2	25.2	29.3	25.6	25.2
	CACM	0	0.1	0.1	0.2	0.5
	MERCOSUR	22.1	23.3	25.6	26.7	27
	NAFTA	21.5	22	21.2	19.1	16.8
	ROW	8.3	7.6	9.7	9.4	11.1

Source: Authors' calculations based on COMTRADE databases

a/ From 2000 to 2003 "EU" includes EU-15 members. For 2004 It also considers the new member states of: Cyprus, Estonia Czech Republic, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia.

b/ "Other east Asian" includes the Association of Southeast Asian Nations(ASEAN4: Indonesia, the Philippines, Thailand and Malaysia), and Newly Industrializing Economies 4 (NIEs4: Taiwan, Korea, Hong Kong and Singapore).

*/ Share of total country's exports (imports) in parts and components

The share of the "other East Asian" bloc in total imports also decreased from 8% in 2000 to 6% in 2004. The huge increase in imports from China (a two-fold increase in import value, from US$ 101 m to US$ 195 m, resulting in an increase in market share from 2.8% in 2000 to 6.3% in 2004) is particularly noteworthy. Japan instead showed a tiny increase from 6.6% in 2000 to 7.2% in 2004. Moreover, "other East Asian" bloc shares in total Argentine exports in parts and components fell from 1.3% in 2000 to 0.13% in 2004.

While the Argentinian's trade in parts and components depicted a pro-South-South pattern, the Brazilian trade followed a more North-South pattern. As Table 2 shows the EU has become Brazil's leading supplier, holding around 30% of its total imports in parts and components by the end of 2004. In decreasing order, Germany, Spain, France and Italy are the main suppliers within this bloc. However, Germany, Spain and Italy decreased slightly their shares from 10%, 3.4%, 4.5% in 2000 to 9%, 2.8% and 4.5% in 2004, respectively. France instead increased its share from 3.5% in 2000 to 5.5% in 2004.

NAFTA, the second supplier, decreased substantially its share from 36% in 2000 to 25% in 2004. Inside this bloc, only the US is ranked among the top ten major country partners of Brazilian imports in parts and components. Though it held a quite significant share into the Brazilian market, it declined from 33.4% in 2000 to 22.5% in 2004. This can be explained by the expansion of China, whose penetration in the Brazilian market has rapidly increased.

Imports from Asia are also noteworthy. The "other East Asian" bloc increased from 13% in 2000 to 19% in 2004. Imports from Korea and Taiwan were the most representative within this bloc. Both economies held increasing shares from 4.3% and 2.5% in 2000, to 7.4% and 3.4% in 2004, respectively. China has substantially increased its share from 3% in 2000 to 8% in to 2004.

Brazil has indeed diversified its export markets in parts and components. While in terms of value, exports to NAFTA slightly increased from US$ 2.0 b in 2000 to US$ 2.7 b in 2004, the relative importance of NAFTA declined from 45% in 2000 to 41% in 2004. This fall is mainly explained by a decreasing participation of the USA market, whose share shrank from 35% in 2000 to 31% in 2004.

In contrast, the relative importance of the EU into the Brazilian exports in parts and components rose significantly from 17% in 2000 to 23% in 2004. Three of the four main EU-partners of Brazil increased substantially their share (Germany, France and United Kingdom, from 5.8%; 1.4%; 1.9% in 2000, to 7.5%, 2%; 5% in 2004, respectively).

The share of Mercosur fell down from 20% in 2000, to 14% in 2004, due to the significant fall of Argentina's share in the Brazilian exports from 18% in 2000 to 13% in 2004. This helped to re-orient the direction of the Brazilian trade in parts and components towards a more North-South pattern.

As regards the Asian blocs, the increase of China's share in the Brazilian exports, from 0.6% in 2000 to 3.6% in 2004, is noteworthy. By contrary, those of Japan and other East Asian bloc are really small and decreasing. This is not unexpected since Brazil represents one of the main locations in which Japanese manufacturing firms develop their activities in Latin American, particularly in the machinery manufacturing industry.

IV.2. The Central American economies

NAFTA represents by far the foremost market from which Guatemala supplies its modest requirements of parts and components. As Table 3 shows, these imports enter the country either by using the common tariff system or the special trade regimes. The US is the leading country partner inside this bloc. However its share went down from 49% in 2000 to 33% in 2004.

Although the shares of the EU, Mercosur and other East Asian are less significant, they increased from 16%; 4%; 8% in 2000, to 17%; 8%; 11% in 2004, respectively. China and Japan instead decreased their shares from 3.5%; 3.6% in 2000 to 1%; 3% in 2004 respectively.

Table 3: Guatemala and Nicaragua,trade in parts and components by economic blocs

	Nicaragua				Guatemala					
	Imports (thousands $)		Exports (thousands $)		Imports (thousands $)			Exports (thousands $)		
					C. Territory		FTZ+ DL2989	C. Territory		FTZ+ DL2989
	2000	2004	2000	2004	2000	2004	2004	2000	2004	2004
JAPAN	708	1103		1	2387	2389	141			0
CAN	17	16	8	1	252	686	3269	355	598	46
CHINA	63	1105			517	787	371		72	0
OTHER EAST ASIAN b/	302	772	6	4	2514	4006	5226		22	2
EU a/	929	1203	7	101	5246	5885	8195	362	273	17
CACM	883	406	213	942	1066	2039	1783	4207	15743	13743
MERCOSUR	168	460	9		681	1574	4957	157	16	5
NAFTA	3950	3899	300	900	23007	20567	10172	6691	4693	350
ROW	864	465	9	247	1342	3142	7003	1545	2073	785
	Shares (%) */				Shares (%) */					
JAPAN	9	11.7	0	0	6.4	2.8	0.2	0	0	0
CAN	0.2	0.2	1.5	0	0.7	0.8	3.9	2.7	1.6	0.1
CHINA	0.8	11.7	0	0	1.4	0.9	0.4	0	0.2	0
OTHER EAST ASIAN b/	3.8	8.2	1.1	0.2	6.8	4.8	6.2	0	0.1	0
EU a/	11.8	12.8	1.3	4.6	14.2	7	9.7	2.7	0.7	0
CACM	11.2	4.3	38.6	42.9	2.9	2.4	2.1	31.6	41	35.8
MERCOSUR	2.1	4.9	1.6	0	1.8	1.9	5.9	1.2	0	0
NAFTA	50.1	41.4	54.4	41	62.2	24.4	12.1	50.2	12.2	0.9
ROW	11	4.9	1.6	11.3	3.6	3.7	8.3	11.6	5.4	2

a/ From 200 to 2003 "EU" includes EU-15 members. For 2004 It considers the new members countries: Cyprus, Estonia Czech Republic, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia.

b/ "Other East Asian" includes the Association of Southeast Asian Nations(ASEAN4: Indonesia, the Philippines, Thailand and Malaysia), and Newly Industrializing Economies 4(NIEs4: Taiwan, Korea, Hong Kong and Singapore). */ Share of total country's imports in parts and components/semi-finished products

As regards to Nicaragua, a number of firms -providers of important multinationals from the automotive industry- have recently moved their operations of light assembly manufacturing to Nicaragua. Though the sector is not well developed yet; it has led to a faint increase of the Nicaraguan trade in parts and components. As Table 3 shows, Nicaraguan imports in parts and components come primarily from NAFTA, in which the US stays as the top leading country partner, though its relative importance decreased substantially from 46% in 2000 to 34% in 2004. By contrary, the EU, Mercosur and the Asian Region increased their relative importance into the Nicaraguan market.

The small relative importance of parts and components in the import structures of Guatemala and Nicaragua is not surprising as both countries have a small manufacturing industry. Moreover, their significance is basically limited to the import structures. In this regard, we do not analyze further the direction of exports in parts and components for these economies. However, considering that semi-finished products hold quite significant shares in their trade structures; it is convenient - for these countries in particular - to explore the direction of their trade in semi-finished products by regional blocs.

Figures in Table 4 depict that the composition of Guatemalan imports in semi-finished goods did not change much during 2002-2004. Nearly half of the Guatemalan imports are shipped from NAFTA, with the US taking an overwhelming share of 40%. Yet, only 17% of these imports from NAFTA are done through the special trade regimes in which the US still take an overwhelming share of 16%. These figures highlight the huge dependence of Guatemala on the US market.

Other East Asian ranks as the second semi-finished products supplier, holding more than 16% of the Guatemalan market. These imports are mostly done through special trade regimes, as several Asian companies, particularly apparel-companies from Korea, delocalized their labor-intensive production activities to this country. The share of CACM (8%) into the Guatemalan imports of semi-finished goods is also noteworthy. El Salvador, Costa Rica and Honduras represent at intra-regional level, the main Guatemala's trade partners.

Guatemalan exports in semi-finished products to CACM as well as to Other East Asia depicted significant changes whilst those to NAFTA

Table 5: Nicaragua's trade in semi-finished by economic blocs

	Exports (thousand $)					Imports (thousand $)				
Block Partner	**2000**	**2001**	**2002**	**2003**	**2004**	**2000**	**2001**	**2002**	**2003**	**2004**
JAPAN	1316	663	353	299	325		4		1	0
CAN	752	1074	346	198	635	30	583	2407	8	71
CHINA	206	454	750	1273	1543		311	75	18	923
OTHER EAST ASIAN **b/**	764	621	1463	1534	1336	1260	540	15	647	1891
EU **a/**	2128	2236	1980	2555	3237	643	2076	3025	2111	2040
CACM	16948	15517	14756	15608	18379	26378	33506	40248	36504	38469
MERCOSUR	434	556	1096	1536	2474	53		4		0
NAFTA	10622	12053	12143	14554	16128	36864	44666	60986	54148	79092
ROW	3757	4934	3074	3260	5392	4265	17399	22601	6899	7377
	Shares (%)					**Shares (%) */**				
JAPAN	3.6	1.7	1	0.7	0.7	0	0	0	0	0
CAN	2	2.8	1	0.5	1.3	0	0.6	1.9	0	0.1
CHINA	0.6	1.2	2.1	3.1	3.1	0	0.3	0.1	0	0.7
OTHER EAST ASIAN **b/**	2.1	1.6	4.1	3.8	2.7	1.8	0.5	0	0.6	1.5
EU **a/**	5.8	5.9	5.5	6.3	6.5	0.9	2.1	2.3	2.1	1.6
CACM	45.9	40.7	41	38.2	37.2	38	33.8	31.1	36.4	29.6
MERCOSUR	1.2	1.5	3	3.8	5	0.1	0	0	0	0
NAFTA	28.8	31.6	33.8	35.7	32.6	53	45.1	47.1	54	60.9
ROW	10.2	12.9	8.5	8	10.9	6.1	17.6	17.5	6.9	5.7

a/ From 200 to 2003 "EU" includes EU-15 members. For 2004 It considers the new members countries: Cyprus, Estonia Czech Republic, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia **b/** "Other East Asian" includes the Association of Southeast Asian Nations(ASEAN4: Indonesia, the Philippines, Thailand and Malaysia), and Newly Industrializing Economies 4(NIEs4: Taiwan, Korea, Hong Kong and Singapore) */ Share of total country's imports in parts and components/semi-finished products

and other blocs did not depict significant variations (see Table 4). In 2004, exports to CACM surpassed more than two-fold the export-value reached in 2002 (from 253 to US$ 516 m dollars) which led to increase its share from 37% in 2002 to 53% in 2004. At the country level, Guatemalan exports to CACM member states increased significantly during this period. Exports to Korea decreased from 85.3 m in 2002 to US$ 33.8 m dollars. As a result, the share of other East Asian decreased notably from 15% in 2002 to 5% in 2004.

As shown in Table 5, Nicaraguan imports in semi-finished goods come basically from NAFTA, whose shares steadily increased from 29% in 2000 to 33% in 2004. The US and Mexico are the most significant partners (24% and 8% in 2004, respectively). These shares – and more in particular the one of US - might be much higher as our data does not include Nicaragua's assembly trade which is mainly performed with the US market. Furthermore, as in the case of Guatemala, the export-oriented assembly sector has grown supported by national policies to promote FDI and exports in this sector, as well as by the special tariff-preference levels the country enjoys under CAFTA.[14] The shares of CACM went accordingly down from 46% in 2000 to 37% in 2004. Costa Rica keeps the largest share in this bloc (18% in 2004), followed by Guatemala and El Salvador with 11% and 8% respectively for 2004.

The EU is the third most important supplier of semi-finished products. It increased slightly its relative participation from 6% in 2000 to 7% in 2004. In contrast, the "Other East Asian" bloc depicted a small participation (2% in 2000 and 3% in 2004). Taiwan and Korea stand as the main partners within this bloc.[15] These low shares seem to be inconsistent with the level of activity that East Asian companies have in Nicaragua. In fact, aside from the American companies, a number of the operating factories in the apparel and textiles sector are owned by Taiwanese and Korean firms. A possible explanation for this inconsistence could be that as our datasets lack information of trade carried out through the free zone regime – the main system used by export-processing firms in Nicaragua -, the effective trade developed by Nicaragua is underestimated. An alternative explana-

14. The tariff-preference level establishes that up to 100 million square meters equivalents (SME) of fabric coming from any part of the world may be used to assemble garments in Nicaragua, which will enjoy tariff-free access to the U.S. However this measure was granted for a limited period of time.

15. Evidently, the share of these countries in the Nicaraguan import structure of semi-finished goods is also tiny (less than 1%) during the whole period.

tion might be given by the fact that several East Asian factories operating in Nicaragua produce garments and textiles products for target American firms. Thus, given the restrictions that US imposed to several East Asian countries (e.g., Taiwan) to place their products in this market it would be possible that they might be sourcing themselves either directly (from their headquarters) or indirectly (through other Central American countries).

On the export side, NAFTA and CACM represent the main markets for the Nicaraguan semi-finished products, accounting jointly for over 90% of total exports in these goods (see Table 5). While the US market increased steadily its share into the Nicaragua's exports in semi-finished (from 25% in 2000 to 41% in 2004), Canada, in contrast, reduced substantially its share from 27% in 2000 to 19% in 2004. Inside CACM, Costa Rica, Guatemala and Honduras constituted in decreasing importance the main destinations of Nicaragua's exports in semi-finished goods.

Contrary to the two South American economies, both Guatemala and Nicaragua depict a clear North-South trade pattern which is evidenced by the fact that their trade in intermediate goods (semi-finished products and parts and components) is highly concentrated in a unique market: NAFTA. This pattern has been enforced by the unilateral preferential terms granted by the US to these countries under the Caribbean Basin Initiative (CBI) and CAFTA.

IV.3. Analysis at the product level

Table 6 and Table 7 show the relative importance of selected groups of parts and components in the Argentine and Brazilian trade flows from 2000 to 2004. A key feature of this type of trade is that it is dominated by products related to the automotive industry, a leading manufacturing activity in these countries.

In the case of Argentina, as Table 6 shows, in 2004, the selected products constituted jointly 57% or about US$1.77 bn of total imports in parts and components and 84% or about $ 1.02 billion of total exports in these goods. The bulk of exports comprised into these groups increased in US$ 179.6 m since 2000, but imports decreased in US$ 108 m since the same year. Five of the twenty major imports are linked to the automotive industry, accounting for over 29% of total imports in parts and components, with parts and accessories for road vehicles (SITC 78439) alone accoun-

Table 6
Argentina: Trade in Parts and components (P&C), relative importance of selected items

		Exports (thousand $)		Shares				Trade Balance		Imports (thousand $)		Shares			
				Exports in P&C		Total Exports						Imports in P&C		Total Imports	
SITC3	Description	2000	2004	2000	2004	2000	2004	2000	2004	2000	2004	2000	2004	2000	2004
69564	Interchangeable tools	12142	20286	1.2	1.7	0.1	0.1	-289	-155	47194	51720	1.3	1.7	0.26	0.2
71322	Reciprocating piston engines	16845	16115	1.6	1.3	0.1	0.1	-492	-550	99784	104818	2.7	3.4	0.55	0.4
71323	Compression-ignition engines	103027	77189	9.9	6.4	0.7	0.4	-2	-128	104911	176229	2.9	5.7	0.57	0.67
71391	Parts for the internal combustion (spark-ignition)	47942	58975	4.6	4.9	0.3	0.3	-4	14	50023	50746	1.4	1.6	0.27	0.19
71392	Parts for the internal combustion (compress-ignition)	35068	48231	3.4	4	0.2	0.3	-174	-72	95929	83097	2.6	2.7	0.52	0.32
71819	Parts including regulators	15287	2580	1.5	0.2	0.1	0	93	92	997	203	0	0	0.01	0
73729	Rolls and other parts for metal-rolling mills	9280	12469	0.9	1	0.1	0.1	0.1	12	9272	11019	0.3	0.4	0.05	0.04
74149	Part of refrigerators	8883	16141	0.9	1.3	0.1	0.1	-55	24	13737	12341	0.4	0.4	0.08	0.05
74291	Parts of the pumps	14714	22804	1.4	1.9	0.1	0.1	-60	-31	23607	29832	0.6	1	0.13	0.11
75997	Parts and accessories (calculators)	13027	5940	1.3	0.5	0.1	0	-2050	-3479	280041	212610	7.7	6.8	1.53	0.81
76211	Radio-broadcast receivers	9746	29300	0.9	2.4	0.1	0.2	-140	21	23399	23089	0.6	0.7	0.13	0.09
77261	Boards and panels	9928	8196	1	0.7	0.1	0	-306	-205	40289	25029	1.1	0.8	0.22	0.1
77831	Electrical ignition or starting equipment	11252	15375	1.1	1.3	0.1	0.1	-374	-136	53373	36309	1.5	1.2	0.29	0.14
77833	Bodies for the motor vehicles	15917	18915	1.5	1.6	0.1	0.1	61	85	6160	2917	0.2	0.1	0.03	0.01
77834	Electrical ignition or starting equipment	14673	14158	1.4	1.2	0.1	0.1	-132	-112	34006	30035	0.9	1	0.19	0.11
78432	Other parts and accessories	32884	74602	3.2	6.2	0.2	0.4	-982	-289	355836	290162	9.7	9.3	1.94	1.1
78433	Brakes and servo-brakes	13811	26665	1.3	2.2	0.1	0.1	-343	-90	61212	50735	1.7	1.6	0.33	0.19
78434	Gearboxes	266452	254922	25.7	21.2	1.7	1.3	55	51	119987	124817	3.3	4	0.66	0.48
78435	Drive-axles with differential	7277	47532	0.7	3.9	0.1	0.2	-638	-16	53728	55126	1.5	1.8	0.29	0.21
78439	Other parts and accessories of the motor vehicles	178582	246020	17.2	20.4	1.1	1.3	-126	-62	403904	398742	11.1	12.8	2.21	1.52
				80.6	84.4	5.3	5.2					51.4	56.9	9.77	6.74

Source : Authors' calculations based on COMTRADE databases.

ting for US$ 399 m, or about 13% of the total exchange in these goods. Gearboxes (SITC-78434) show a positive trade balance during the whole period, which is explained by the fact that during the last years the sector has attracted investments from leading multinational automakers, induced by the lower production costs and the growing domestic market.

Table 6 also shows that products linked to machinery and equipment are fairly significant. Compression-ignition engines (SITC 71323) raised their imports share from 2.9% in 2000 to 5.7% in 2004, whereas they have reduced their exports shares from 10% in 2000 to 6% in 2004. Exports of parts included in SITC-71819 group accounted for only US$ 2.5 m of total exports in parts and components, decreasing its relative participation from 2% in 2000 to 0.2% in 2004. However, this group still holds a positive trade balance.

Products related to the electrical machinery industry, as boards (SITC-77261), parts of electrical ignition (SITC 77833), electrical equipment (SITC 77834) are also noteworthy. Taken together, these groups accounted for about 5% of total exports in parts and components. Office machines products are ranked also as major Argentine trade in parts and components, parts and accessories for calculating machines (SITC 75997) being the most representative group, with 7% of total imports in parts and components.

Though the relative importance of the selected products into the Argentinian trade in parts and components has risen, the one they hold in total trade has decreased. While the relative importance of these products on total exports of part and components passed from 81% in 2000 to 84% in 2004, their share in total Argentina's exports show stagnation. Taken together the selected products share only 5% of total Argentina's exports in 2000 as well as in 2004.

In the case of Brazil, the major twenty groups represent 42% of total imports in parts and components in 2000 and about 75% of all exports of this kind in 2004 (see Table 7). Half of them record a positive trade balance, since Brazilian manufacturing not only develops assembly activities but also produces some high technology components. Six of the twenty major groups are related to the automotive industry, accounting for 14% of total imports in parts and components and about 32% of total exports. Parts and accessories for motor vehicles (SITC 78439) is the most representative one, having improved its trade balance through time.

Table 7
Brazil: Trade in parts and components (P&C), relative importance of selected items

		Exports (thousand $)		Shares				Trade Balance		Imports (thousand $)		Shares			
				Exports in P&C		Total Exports						Imports in P&C		Total Imports	
SITC3	Description	2000	2004	2000	2004	2000	2004	2000	2004	2000	2004	2000	2004	2000	2004
69564	Interchangeable tools	37894	71408	0.8	1.1	0.1	0.1	-86.2	17.8	70578	58694	0.58	0.4	0.16	0.13
71322	Reciprocating piston engines	108598	526329	2.4	7.8	0.3	0.9	-101.3	78.8	218553	111490	1.79	0.8	0.48	0.24
71323	Compression-ignition engines	182258	352586	4	5.2	0.5	0.6	7.1	36.6	169228	223473	1.39	1.7	0.37	0.49
71391	Parts for the internal combustion (spark-ignition)	403691	372697	8.9	5.5	1.1	0.6	47	12.2	213866	327253	1.75	2.4	0.47	0.72
71392	Parts for the internal combustion (compress-ignition)	368187	715869	8.1	10.6	1	1.2	41.3	71.1	216254	207058	1.77	1.5	0.48	0.45
72399	Other parts for the machinery of group 723	50408	92044	1.1	1.4	0.1	0.2	-67.5	-95.3	84449	179722	0.69	1.3	0.19	0.39
74822	Bearing housings.	46838	72577	1	1.1	0.1	0.1	31	38.9	32332	44316	0.27	0.3	0.07	0.1
76211	Radio-broadcast receivers	209032	74117	4.6	1.1	0.6	0.1	88.3	54.2	24518	33971	0.2	0.3	0.05	0.07
76491	Parts and accessories (telecommunications)	71947	80583	1.6	1.2	0.2	0.1	-583.7	-125.7	491891	181879	4.04	1.3	1.08	0.4
76493	Parts and accessories	120800	158558	2.7	2.4	0.3	0.3	-705.6	-688.1	973114	1249555	7.98	9.3	2.14	2.74
77611	Television picture tubes	132892	109604	2.9	1.6	0.4	0.2	-9.1	-107.7	144948	227670	1.19	1.7	0.32	0.5
77812	Electric accumulators	41506	85004	0.9	1.3	0.1	0.1	-194.1	-102.6	122071	172190	1	1.3	0.27	0.38
77831	Electrical ignition or starting equipment	54729	72906	1.2	1.1	0.2	0.1	-70.1	-28.2	93112	93485	0.76	0.7	0.2	0.21
78425	Bodies for the motor vehicles	180249	231804	4	3.4	0.5	0.4	86.9	94	23676	13869	0.19	0.1	0.05	0.03
78432	Other parts and accessories	94808	219180	2.1	3.3	0.3	0.4	-292.5	-99.5	372153	437181	3.05	3.2	0.82	0.96
78433	Brakes and servo-brakes	149115	319062	3.3	4.7	0.4	0.5	37.4	53.3	93271	149022	0.77	1.1	0.21	0.33
78434	Gearboxes	111245	216013	2.4	3.2	0.3	0.4	-117.7	-88.4	242154	407009	1.99	3	0.53	0.89
78435	Drive-axles with differential	90863	87597	2	1.3	0.3	0.1	47.9	-2.1	47328	89474	0.39	0.7	0.1	0.2
78439	Other parts and accessories of the motor vehicles	733352	1082556	16.1	16.1	2	1.8	-14.7	29.2	840914	766937	6.9	5.7	1.85	1.68
79295	Other parts of aeroplanes or helicopters	121445	71562	2.7	1.1	0.3	0.1	-423.8	-977.1	636119	770798	5.22	5.7	1.4	1.69
	All Above			72.8	74.5	9.15	8.27					41.9	42.6	11.24	12.6

Source : Authors' calculations based on COMTRADE databases

Besides the automotive industry, machinery and equipment is also representative. Four of the twenty major groups are related to this sector (71322, 71323, 71391 and 71392). In 2004, they accounted jointly for over 6% of imports and about 29% of exports, rising their relative participation from that showed in 2000 (23%) only on the export side. Among these four groups, piston engines (71322) greatly raised its relative participation from over 4% in 2000 to about 8% in 2004. In decreasing importance, parts and components related to the electronics, telecommunications and aircrafts industries are also included among the major groups.

Although in terms of value added, trade in parts and components has greatly increased, the relative importance of the major groups in total Brazilian exports has not increased significantly. On the imports side, these twenty groups raised their participation in total Brazilian imports from 11% in 2000 to about 13% in 2004. On the exports side, they have slightly decreased their share into total Brazilian exports from 9% in 2000 to about 8% in 2004.

Additional information about Argentinian and Brazilian trade in parts and components is provided when the value of exports is aggregated up to two-digit SITC groups of parts and components. Road motor vehicles (parts, sub-group 78) is by far the most important category. It accounts for over 55% of Argentina's exports in parts and components, and for 33% in the case of Brazil. A second important category is machinery and equipment which account for 18% of Argentina's exports, but for 31% of the total Brazilian exports in parts and components in 2004. Electronics and telecommunications come then, in decreasing importance. In the case of Brazil, their relative participation has grown. In the case of Argentina, by contrast, electronics has decreased in importance, from 10% in 2000 to 8% in 2004, whereas telecommunications kept a share of 3% during this period.

The data indicates therefore that Brazil has consolidated its insertion into diverse manufacturing chains of production; but it also has achieved this within a diversified North-South pattern. Argentina, instead, has attained a strong insertion into the automotive chain of production, whereas its insertion within other chains seems still reduced. Moreover, the country retains its insertion within a South-South scheme.

Table 8
Guatemala: Trade in semi-finished products, relative importance of selected items

		Exports (thousand $)		Trade Balance (thousand $)		Shares (%)			
						Total Imports *		Imp in Semi-Finished	
SITC3	Description	2002	2004	2002	2004	2002	2004	2002	2004
33411	Motor spirit (gasoline)	19130	62607	-732	-557	0.2	0.7	1	1.9
42111	Crude oil	8706	39406		-22776	0.1	0.4	0.5	1.2
64141	Kraft paper	17327	27227	-933457	-226793	0.2	0.3	0.9	0.8
65133	Cotton yarn (various % of weight of cotton)	53231	113664	-1625	-1854	0.7	1.2	2.8	3.5
65232	Other woven fabrics (>% of weight cotton)	50289	66097	-807	-400	0.7	0.7	2.7	2
65242	Other woven fabrics (>% of weight cotton)	28330	30126	-427	-650	0.4	0.3	1.5	0.9
65243	Other woven fabrics (>% of weight cotton)	59862	46065	-6152	-2924	0.8	0.5	3.2	1.4
65254	Other woven fabrics (<% of weight cotton)	10750	33752	-5474	-82374	0.1	0.4	0.6	1
65292	Other woven fabrics of cotton	43340	83551	-452	-484	0.6	0.9	2.3	2.6
65311	Fabrics. woven. of synthetic filament yarn	266183	27	-12398	90	3.5	0	14.2	0
65315	Other.Fabrics. woven (synthetic)	14261	29586	-333	-717	0.2	0.3	0.8	0.9
65317	Other Fabrics. woven (synthetic)	37215	40173	-14486	-2679	0.5	0.4	2	1.2
65331	Fabrics. woven. of synthetic staple fibres	24920	24378	-1592	-2162	0.3	0.3	1.3	0.8
65342	Fabrics. woven. of synthetic staple fibres	18451	31078	-34663	-78894	0.2	0.3	1	1
65343	Fabrics. woven. of synthetic staple fibres	26099	34158	-7909	-8186	0.3	0.4	1.4	1.1
65529	Knitted or crocheted fabrics	62467	412866	-266044	-6194	0.8	4.4	3.3	12.8
65621	Labels and articles of textile materials	22630	29626	-3185	-922	0.3	0.3	1.2	0.9
65732	Textile fabrics	15728	22352	-1068	-380	0.2	0.2	0.8	0.7
66729	Diamonds	25891	9353		-2326	0.3	0.1	1.4	0.3
89281	Paper and paper products	22753	25162	-1335	-1179	0.3	0.3	1.2	0.8
	All above items					10.8	12.3	44.1	35.9

Source: Authors' calculations based on Bank of Guatemala statistics

*/ Total Imports shipped by special regimens

Table 9
Nicaragua: Trade in semi-finished products, relative importance of selected items

		Imports (thousand of $)					Shares (%)									
							Total Imports					Imports in semi-finished				
SITC3	Description	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004	2000	2001	2002	2003	2004
4711	Maize (corn) flour	6363	4473	4203	4020	4439	0.58	0.39	0.36	0.33	0.33	1.7	1.2	1.2	1	0.9
8199	Preparations of a kind used for animal food. n.e.s.	4459	5453	6872	4465	4322	0.41	0.48	0.59	0.37	0.32	1.2	1.4	1.9	1.1	0.9
33419	Other light petroleum oils and light oils obtained from bituminous	8	21870	0	0	0	0	1.91	0	0	0	0	5.7	0	0	0
33541	Petroleum bitumen and other residues of petroleum oils	242	2524	4260	8428	7384	0.02	0.22	0.37	0.7	0.54	0.1	0.7	1.2	2.1	1.5
41132	Fats of bovine animals. sheep or goats. raw or rendered. whether	4079	4883	4586	6998	8599	0.37	0.43	0.4	0.58	0.63	1.1	1.3	1.3	1.7	1.7
42111	Crude oil. whether or not degummed	1339	746	7244	12130	12079	0.12	0.07	0.62	1.01	0.88	0.4	0.2	2	3	2.4
42229	Refined oil and its fractions	9828	9457	12070	18871	22489	0.9	0.83	1.04	1.57	1.65	2.7	2.5	3.4	4.6	4.5
53342	Paints and varnishes (including enamels and lacquers)	2991	3288	3406	7115	7360	0.27	0.29	0.29	0.59	0.54	0.8	0.9	0.9	1.7	1.5
54163	Antisera and other blood fractions; vaccines	7109	5073	3498	7246	9154	0.65	0.44	0.3	0.6	0.67	1.9	1.3	1	1.8	1.9
54191	Wadding. gauze. bandages and similar articles	3084	2203	2221	14362	19927	0.28	0.19	0.19	1.2	1.46	0.8	0.6	0.6	3.5	4
56216	Urea. whether or not in aqueous solution	4382	8903	7582	10788	13601	0.4	0.78	0.65	0.9	1	1.2	2.3	2.1	2.6	2.8
57111	Polyethylene....having a specific gravity of less than 0.94	5330	5277	5134	5902	8243	0.49	0.46	0.44	0.49	0.6	1.4	1.4	1.4	1.4	1.7
64126	Other paper and paperboard. weighing 40 g/m2 or more	3962	3642	3918	6175	8110	0.36	0.32	0.34	0.51	0.59	1.1	1	1.1	1.5	1.6
66121	Cement clinkers	6815	5883	2354	4240	11143	0.63	0.51	0.2	0.35	0.82	1.8	1.5	0.7	1	2.3
66245	Glazed ceramic flags and paving. hearth or wall tiles	5693	6121	6244	7663	10994	0.52	0.54	0.54	0.64	0.8	1.5	1.6	1.7	1.9	2.2
66511	Carboys. bottles. flasks. jars. pots. phials and other containers	8639	8491	7353	8169	8298	0.79	0.74	0.63	0.68	0.61	2.3	2.2	2	2	1.7
67413	Flat-rolled products..otherwise plated or coated. of a width of 600	19811	17802	13895	14061	21014	1.82	1.56	1.2	1.17	1.54	5.4	4.7	3.9	3.4	4.2
69119	Other	6311	3247	6149	2899	7592	0.58	0.28	0.53	0.24	0.56	1.7	0.9	1.7	0.7	1.5
77315	Other electric conductors. for a voltage exceeding 80 V but not exc.	5956	7123	6734	9397	10394	0.55	0.62	0.58	0.78	0.76	1.6	1.9	1.9	2.3	2.1
89319	Articles for the conveyance or packing of goods. n.e.s.; stoppers	11399	13584	14377	16149	17334	1.05	1.19	1.24	1.35	1.27	3.1	3.6	4	4	3.5
	All above items						10.8	12.3	10.5	14.1	15.6	31.9	36.7	34	41.4	43

Source : Authors' calculations based on COMTRADE databases

As regards Guatemala, we analyzed the relative importance that semi-finished products have in the trade flows. Table 8 depicts imports (2002-2004) of selected semi-finished items by using special regimes products. Although the twenty selected products represent only 36% of total Guatemala's imports in semi-finished products, they also account jointly for over 13% of total imports through special regimes in 2004. Moreover, the data highlights that most of the selected groups are related to semi-finished products used in the apparel and textile industries. In fact, in 2004, two-digit textiles (SITC 65) accounted for about 70% of total imports in semi-finished products, followed by miscellaneous manufactured articles (SITC 89) with 4%, and paper articles (SITC 64) with 3.5%. Knitted or crocheted fabrics (SITC 65529) is the most representative, especially since it has experienced a notable growth in its relative participation in Guatemala's imports in semi-finished products through special regimes, going from 3% in 2002 to about 13% in 2004. Almost all the selected groups record huge negative trade balances, suggesting that Guatemala is a net importer of the inputs required in assembly activities.

In the case of Nicaragua, it is not possible to analyze in detail the importance of trade in semi-finished products, since COMTRADE data do not include the special regimes. Nevertheless, the National Commission of Free Trade Zones (CNZF, Spanish acronym) publishes general statistics on trade through the free trade zones. Though limited, such statistics provide useful information on how this type of trade has evolved since 2002. According to CNZF, in 2002, its imports were over US$ 267 m, whereas exports went over US$ 346 m. In terms of value-added, the activities in free trade areas represented over US$ 111 m, with textiles and apparel accounting for about 90% of the total . In 2004, imports surpassed US$ 441 m - 65% more than those in 2002. Similarly, exports rose to US$596 m, about 72% more than 2002 exports. This trade is highly related to assembly activities. Table 10 helps to identify what major products groups are of primary importance in trade of free zones. Apparel is by far the most representative group. In 2004, it accounted for US$396 m, or over 65% of total Nicaraguan imports through free zones, and US$ 484 m or about 66% of total exports through this regime.

Besides the apparel industry, parts and accessories linked to the automotive sector have greatly gained importance in the trade through free zones. On the imports side, it went from 3% in 2004 to over 9% in 2005, whilst in the exports side, from 9% in 2004 to 28% in 2005. This might be

Table 10: Nicaragua's trade in Free trade zones

	Add-value				Exports				Imports			
	(thousand $)		share in (%)		(thousand $)		share in (%)		(thousand $)		share in (%)	
Description	**2002**	**2003**	**2002**	**2003**	**2004**	**2005**	**2004**	**2005**	**2004**	**2005**	**2004**	**2005**
Fixed vegetable fats and oils					795,8	1070,1	0.13	0.1				0
Medical accessories						38,4		0		29,3		0
Furnishing articles, n.e.s.	15,9	339,8	0.001	0.25	1497,3	1672,4	0.25	0.2	491,1	620,8	0.11	0.1
Parts and accessories for road vehicles	957,0	7818,2	0.86	5.83	71554,8	208205,9	11.99	28.2	14396,0	50863,8	3.26	9.2
Plastics bags for packing purposes									250,9	300	0.06	0.1
Embroidery, engraving and prints									551,1	600	0.12	0.1
Wood boxes and cases for tobacco					552,0		0.09		187,5	200	0.04	0
Cartons, boxes and cases,	1272,1	1013,4	1.14	0.76					5159,4	3869,6	1.17	0.7
Footwear	996,6	1672,1	0.89	1.25	531,7		0.09		320	350	0.07	0.1
Vegetables						860		0.1		5000		0.9
Electrical apparatus for domestic use(assembled)					89,9		0.02		19,3		0	0
Rubber wound									2270,1	1702,6	0.51	0.3
Articles and accesories for billards												0
Wigs, false beards, eyebrows and eyelashes,					17,8		0		15,7	11,8	0	0
Metallic furniture					251,1	322	0.04	0	271,9	203,9	0.06	0
Chemical preparations for apparel products									479,9	510	0.11	0.1
Tobacco and tobacco manufactures	7279,2	8923,3	6.53	6.65	36407,2	33367,0	6.1	4.5	12354,2	15823,1	2.8	2.9
Electronic cards					3,1		0		5,7		0	0
Telecomunications	317,2	249,6	0.28	0.19	45,8		0.01					0
Textiles	331,7	716,5	0.3	0.53	0,4		0		8562,6	11416,8	1.94	2.1
Apparel	99851,5	112099,9	89.58	83.58	484974,5	493593,3	81.27	66.8	396019,1	458500,7	89.73	83.4
Others n.e.s	444,9	1286,4	0.4	0.96								
All above	111466,4	134119,5	100	100	596722,0	739129,3	100	100	441355,2	550003	100	100

Data source: Extracted from Annual reports of 2003-2004 and 2005-2006, National Commission of Free Trade Zones (CNZF) of Nicaragua

explained by the substantial foreign investments from multinationals - providers of renowned automakers -, which established base plants for light assembly of automotive manufactures.

IV.4. The Central American dependence

All until now highlights that Guatemala and Nicaragua have not succeeded yet in diversifying their participation in fragmented processes. Even though they belong to the world apparel and textile chain, their participation is merely limited to assembly activities. Furthermore, their North-South trade pattern is largely dependent on a unique market, the US. Several factors have contributed to this. Low labor costs, trade and FDI policies and the location advantages are only a few. But this has several implications from an economic and policy point of view.

First, from 2001 to 2003, Guatemala held a steady but small share of 2.3% in the total US imports of apparel and textiles (see Table 11). Yet, since 2005, this share has quickly declined, reaching only 1.8% of the US market by the end of 2006. Nicaragua's share is even smaller. Moreover, spite that it increased from 0.5% in 2001 to 0.9% in 2006, it remains rather small yet. This suggests that as long as Nicaragua and Guatemala remain confined to a unique market, they will also stay highly exposed to US policies, which might unexpectedly destabilize their economies. Hence, it highlights the importance for these economies to define policy measures towards attaining a diversified North-South production sharing pattern.

Second, Guatemala and Nicaragua face huge competition in apparel and textiles. Their share in the world market of apparel and textiles is not only threatened by China but also by their neighbors. Analyzing the shares of their closer competitors in the US market of apparel and textiles, we find that, in a global perspective, the share of Central American countries has decreased in the US imports in apparel and textiles. However, Table 11 shows that Honduras holds a higher share in the US market than Guatemala. In this sense, it puts forward the urgency that Guatemala implements policy measures aimed at recovering its share in the US market, as well as enhancing its competitiveness.

For Nicaragua, the picture looks even more complex, since it is one of the countries with less penetration in the US market of apparel and textiles. Yet, taking into account that Nicaragua is increasing its relative

Table 11
Trends in US apparel and textiles imports from Central America

	Imports (millions of $)						Share (%)					
Partner	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
WORLD	70240	72183	77434	83310	89205	93277						
Honduras	2348	2444	2507	2678	2629	2445	3.3	3,4	3,2	3,2	2,9	2,6
Guatemala	1614	1669	1773	1959	1831	1678	2.3	2,3	2,3	2,4	2,1	1,8
Dominican Republic	2274	2173	2128	2066	1855	1550	3.2	3	2,7	2,5	2,1	1,7
El Salvador	1646	1709	1758	1757	1646	1433	2.3	2,4	2,3	2,1	1,8	1,5
Nicaragua	374	433	484	595	716	879	0.5	0,6	0,6	0,7	0,8	0,9
Costa Rica	753	730	594	524	492	479	1.1	1	0,8	0,6	0,6	0,5
Total Central America							9.5	9,3	8,7	8,3	7,3	6,5

Source: Official statistics of the US Department of Commerce. International Trade Administration Office of Textiles and apparel

participation, supported by the temporary benefits granted by CAFTA, the country should not disregard the implementation of measures towards the strengthening of its competitiveness, as a mechanism to enhance its share in the world market of apparel and textiles.

Finally, the US keeps a very restrictive trade policy, which leads most Central American companies engaged in production sharing to have an incentive for minimizing their local purchases of inputs, since only components made in the US are exempts from imports duties when the finished product is shipped back there. As a result, the integration between export-oriented activities and the local economy is being hindered, limiting the usefulness of production sharing as a stepping-stone to higher stages of industrialization. This also shows up the importance that these economies search for new opportunities to connect themselves to other world chains of production.

V. Conclusions: Perspectives and Policy Remarks

Sharing production has become a key feature of the world economy. It raises important implications for the development of the economies that can participate in it, but it also decreases the opportunities for those countries out of the process.

This paper constituted a first attempt to assess the importance of sharing production for four Latin American countries: Argentina, Brazil, Guatemala and Nicaragua. Further research must necessarily be done to capture the essence and real effects of this phenomenon in each of them.

The four countries studied have reached their insertion, or lack of, in production sharing processes by following different trade patterns. Guatemala and Nicaragua exhibit a clear North-South trade pattern. Nonetheless, their share in fragmented chains of production is still small, and threatened not only by a huge international competition but also by their strict dependence on a unique market. Brazil has consolidated a modest participation in a few production chains, holding a more diversified North–South trade pattern. Argentina has attained a reasonable participation in the automotive chain of production, but its insertion in other chains seems still quite limited. It shows a more South-South trade pattern, exposing it to a certain degree of dependence on its South American neighbors.

In a broader perspective, though Brazil stands somewhat better and the Caribbean countries worse, the four economies share a similar insertion. All are small (or very small) exporters of parts and components, as well as small importers of them (Brazil, here, being the exception). All are big importers of semi-finished, and big (to very big) exporters of final consumption goods. They are also big (or "small to big") exporters of semi-finished, but, with the exception of the car industry, these are barely processed commodities or natural products, with a low value-added. Drawn, as it was, from so different countries, this common evidence suggests that, as regards international fragmentation, Latin America remains close to midgets, and quite far from the champions.

Policy implications of the above are manifold. They range from the pattern of the division of labor in the continent to the sustainability of each individual country trade flows. Nowadays better times for most Latin American economies seem to be the moment to address a courageous rethinking of this situation. This should contemplate a dual objective. Improve the present insertion in global chains, while creating more employment opportunities inside each country and strengthening the links among the different economies in the continent. Reconcile both is neither obvious, though nor impossible.

VI. References

Ando, Mitsuyo, (2006). "Fragmentation and vertical intra-industry trade in East Asia," *The North American Journal of Economics and Finance,* Elsevier, vol. 17(3), pages 257-281, December.

Arndt, Sven, (1998), "Super-Specialization and the Gains from Trade", *Contemporary Economic Policy,* v.16 October 1998, pages 480-485.

Athukorala, Prema-chandra & Yamashita, Nobuaki, 2006. "Production fragmentation and trade integration: East Asia in a global context," *The North American Journal of Economics and Finance*, Elsevier, vol. 17(3), pages 233-256, December.

Robert C. Feenstra, 1998. "Integration of Trade and Disintegration of Production in the Global Economy," *Journal of Economic Perspectives,* American Economic Association, vol. 12(4), pages 31-50, Fall.

Feenstra, R. C., Hanson, G., & Swenson D. L. (1998). "Offshore Assembly from The US: Production Characteristics of the 9802 Program". National Bureau of Economic Research.-BER, Working Paper(98-10).

Fontagne, L., Freudenberg, M., & Unal-Kesenci, D. (1999). "Trade in technology and quality ladders: where do EU countries stand?". *International Journal of Development Planning Literature*, 14(4), 561-582.

Fontagné, L. & Freudenberg Michael. (1997). "Intra-Industry Trade Methodological Issues Reconsidered". CEPII, Working paper (97-01).

Grossman, G. M., & Helpman Elhanan. (2002). "Outsourcing in a Global Economy". National Bureau of Economic Research - NBER, Working paper (8728).

Görg, H. (2000). "Fragmentation and trade: US inward processing trade in the EU". *Review of World Economics/ Weltwirtschaftliches Archives*, 136(3), 403-422.

Hummels, D., Ishii, J., & Yi, K.-M. (2001). "The nature and growth of vertical specialization in world trade". *Journal of International Economics,* 54(1), 75-96.

Hummels, D., Raporport, D., & Yi.Kei-Mu. (1997). "Globalisation and the Changing Nature of World Trade" . *Economic Policy Review*, 3(2), 53-81.

Jones, R., Kierzkowski, H., & Lurong, C. (2005). "What does evidence tell us about fragmentation and outsourcing?: Outsourcing and Fragmentation:Blessing or threat". *International Review of Economics & Finance*, 14(3), 305-316.

Jones, R. W., & Kierzkowski, H. (2005). "International fragmentation and the new economic geography". *North American Journal of Economics & Finance*, 16(1), 1-10.

Kimura, F., & Ando, M. (2005). "Two-dimensional fragmentation in East Asia: Conceptual framework and empirics: Outsourcing and Fragmentation: Blessing or threat". *International Review of Economics & Finance*, 14(3), 317-348.

Lafay G. (1994). "The measurement of revealed comparative advantages". In *International Trade Modeling* , M. G. Dagenais & P. A.Muet (Eds.).

Lemoine, F., & Unal-Kesenci, D. (2004). "Assembly Trade and Technology Transfer: The Case of China". *World Development*, 32(5), 829-850.

Sanyal, K. K., & Jones, R. W. (1982). "The Theory of Trade in Middle Products". *American Economic Review*, 72(1), 16.

Van Long, N., Riezman, R., & Soubeyran, A. (2005). "Fragmentation and services: Fragmentation and Services in the Modern Economy". *The North American Journal of Economics and Finance,* 16(1), 137-152.

Yeats, A. (2001). "Just How Big is Global Production Sharing?" In: *Fragmentation: New Production Patterns in the World Economy*, Edited by .Sven W Arndt and H Kierskowski. Oxford University Press.